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ABSTRACT

To demonstrate the impact facilities can have on learning, some exemplary elementary schools that made the decision to provide a good educational environment are presented. To assess the impact of these facilities, students, teachers, parents, superintendents, and other administrators were interviewed. The book opens with a discussion of whether the building does make a difference in education and concludes that the physical surroundings wield a profound effect on children and personnel. Discussed next are various philosophies that influence structural design and how classrooms should be constructed to help children learn. The school environment should stimulate and motivate children, and it should support educational initiatives, not hinder them. Some of the specific areas that are discussed at length include communications and technology, enrichment and support space, and outdoor learning and play. The theme of the text, "a place where people want to be", is the focus of the last chapter. Each section features numerous interior and exterior photographs of school buildings. An appendix lists the schools that are featured in the text. (RJM)

 ELEMENTARY SCHOOLS

IMPACT ON EDUCATION SERIES

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RECOGNIZING THE IMPORTANCE OF THE SCHOOL
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THE COUNTRY STRUGGLE TO TEACH. AND
STUDENTS STRUGGLE TO LEARN SIN BUILDINGS.
THAT ARE OUTDATED, OVERCROMORD, AND POOPLY
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FACILITIES THAT ENHANCE THE EDUCATIONAL
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Associates,Inc.

IMPACT ON EDUCATION SERIES

This book is dedicated to teachers.

who serve as a lifelong source of inspiration to their students;
parents, who truly make a difference in the quality of education today;
and children, who are just embarking on their educational journey;
We hope that their path to learning is fascinating and fun.

Δ.

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MAKING A WORLD OF DIFFERENCE

Elementary Schools

During the course of our research for *Making A World of Difference: Elementary Schools*, we conducted several focus groups and interviews with school administrators, faculty members, parents, volunteers, and students. Their input was critical in helping us document the many ways a school building makes a difference in the quality of education—down to the smallest details of day-to-day planning and instruction.

In particular, we would like to thank the participants of our focus groups:

Olentangy Local School District— Alum Creek Elementary School and Wyandot Run Elementary School; Lewis Center, Chio October 15, 1996

Jim Bickley, Fourth-Gracle Teacher, Alum Creek Steve Bilikam, P.E. Teacher, Wyandot Run Carol Burley, Kindergarten Teacher, Wyandot Run Süe Cox, Intervention Specialist, Alum Creek Sara Keaney, First-Grade Teacher, Alum Creek Lori Kipfer, Music Teacher, Wyandot Run Norene Mapes, Counselor, Wyandot Run Debbie Matix, Cafeteria, Alum Creek Keith Richards, Superintendent Laurie Schaefer, Fifth-Grade Teacher, Alum Creek Dan Sipek, Principal, Wyandot Run Colene Stump, Principal, Alum Creek

Delphi Community Schools – Hillcrest Elementary School; Delphi, Indiana October 9, 1996

Steven E. Carroll, Principal Linda Jackson, Media Specialist Wendy Kerker, Fifth-Grade Teacher Dr. John E. Williams, Superintendent Twin Valley Community Local School District— Twin Valley School; West Alexandria, Ohio October 18, 1996

Pam Coleman, Kindergarten Teacher Paul Erslan, Superintendent Shirleann Fahrenholz, First-Grade Teacher Kent McIntire, Principal Patti Precht, Fourth/Fifth-Grade Teacher Roseann Williams, LD Teacher

Penn-Harris-Madison School Corporation – Horizon Elementary School; Granger, Indiana September 19, 1996

Julie Adams, Fifth-Grade Teacher
Jayson Balsley, Third-Grade Teacher
Martha Bartels, Second-Grade Teacher
Sandra Cook, Assistant Principal
Phyllis Gartner, Second-Grade Teacher
James Handress, Principal
Laura McIntire, First-Grade Teacher
Sandy Roggeman, P.E. Teacher
Pauline Van Laere, Second-Grade Teacher
Diane Zuber, Music Teacher

School City of Hammond-Maywood Elementary School; Hammond, Indiana October 11, 1996

Linnette Allen, Fourth-Grade Teacher Diane Denton, Office Manager Jennifer Drutis, Librarian Linda Frazier, First-Grade Teacher Stanley Griffin, Principal Janet Grove, Fifth-Grade Teacher Kathy Nelson, First-Grade Teacher Tanya Sartin, Human Services Director Katherine Stahl, Kindergarten Teacher

Delaware City Schools— Robert F. Schultz Elementary School/ Conger Elementary School; Delaware, Chio October 16, 1996

Pat Bohmer, Principal, Schultz
Sandy Harrison, Fifth-Grade Teacher, Schultz
Angie Hillier, Fourth-Grade Teacher, Schultz
Sandy Kramer, Kindergarten Teacher, Conger
Reg Main, Reading Instructor, Conger
Bonnie Ristau, Second-Grade Teacher, Conger
Jerry Steele, Third-Grade Teacher, Schultz
Jackie Washington, Fourth-Grade Teacher, Conger
Patty Womeldorf, First-Grade Teacher, Schultz

Penr. Harris-Madison School Corporation— Elm Road Elementary School; Osceola, Indiana October 11, 1996

Sandra Cook, Assistant Principal Jim DuBois, Principal Bea O'Dell, Teaching Assistant

Community Schools of Frankfort – Suncrest Elementary School; Frankfort, Indiana October 9, 1996

R. Joseph Dixon, Superintendent Mary Jo Giesler, First-Grade Teacher Chris Guffy, Media Specialist Alan Jackson, Principal Pattie Sherman, Fourth-Grade Teacher

Reynoldshurg City Schools-Taylor Road Elementary School; Reynoldsburg, Ohio October 15, 1996

Deborah Bergeron, Principal JoAnn Codrea, Second-Grade Teacher Dianne Gabel, Kindergarten Teacher Marlie Griffin, SLD Resource Teacher Pat Heater, Guidance Counselor Janis Smith, Librarian Dawn Tufto, Fourth-Grade Teacher Barbara Woodland, Third-Grade Teacher Cindy Yost, Parent

We would also like to acknowledge the invaluable contributions and suggestions of the more than 100 elementary school students who participated in our focus groups, granted us interviews, and contributed their ideas and artwork for the development of this book.

MAKING A WORLD OF DIFFERENCE

Elementary Schools

Teachers are very adaptive in that they can teach in almost any kind of environment. All one has to do to validate this is to visit buildings where education takes place. Even in buildings that are oid, in poor condition, and unsafe, teachers are dedicated to their students, but they have to make do with the condition of the classroom. After moving into a new building, one principal remarked that the teachers no longer had to "fight the environment." This is perhaps the most telling description I have ever read about the difference between a good school building and one that is outdated.

Some seem to believe that students can learn effectively regardless of the condition of the building. Very seldom do we hear community members and school boards raise the questions of how much better can a teacher teach and how much more can a student learn in a safe, modern building. True, the environment does not control all of the learning that takes place, but it does have an influence upon the amount students can learn.

Recently, several research studies have supported this. Some report a difference of as much as 11 percentile ranks between standardized test results of students in modern buildings as compared with those of students in poor buildings. At a minimum, these studies report the difference in performance as being on the order of 5 percentile ranks. This fact has been documented in a large metropolitan area, rural areas, large high schools, and in a statewide study.

The deteriorating condition of schools has also been well documented. A United States General Accounting Office report entitled *School Facilities* reveals that upwards

of 30 percent of all schools in the country are in need of extensive repairs or replacement. Approximately 14 million students attend schools in substandard condition. If school buildings are in safe and modern condition, student performance can be expected to improve. The question then becomes, why don't we spend the funds necessary to bring all school buildings up to standard, and in effect improve student learning and teacher effectiveness? The problem is perhaps more pertinent than most people realize.

The school building, as the center of the community, tells the student how society values them. Elementary school students are so very impressionable and are especially sensitive to their environment. Jonathan Kozol, author of *Savage Inequalities*, has said, "Physical squalor is a fact and it is also a metaphor. It tells a child what we think she is worth." Students in old, run-down buildings know that the community does not value education or the students. Students in modern buildings have an outlook on education that tells them the community values them as precious assets and desirable members of the community, and their behavior reflects this.

This book depicts many exemplary schools within communities that have made the decision to provide a good educational environment that will impact both student learning and behavior. What better way to influence the future of the country than by positively influencing elementary school students?

-- Glen I. Earthman. Virginia Polytechnic Institute & State University, March 1997

MAKING A WORLD OF DIFFERENCE

Elementary Schools

Harold L. Hawkins, a former school superintendent and university professor, once wrote in *School Planning & Management* magazine: "A test of a good learning environment—and a good school building—is whether people want to be there when they don't have to be." His observation is one that we have heard echoed in the educational community repeatedly. Teachers, parents, and the students themselves often tell us how much they like being in their new or modernized schools—how they even like to come in early and stay late, or volunteer as often as possible. Many mention this desire to put in more time or stay fo "xtra activities with surprise—as if the motivation and excitement to be at school comes as quite a revelation.

It shouldn't be so surprising. The school environment should stimulate, motivate, and at the very least, it should support educational initiatives, not hinder them. As Professor Hawkins has also pointed out. "A school does not merely house the program of instruction: it is part of the program." At best, a school should be a strong source of community pride, and a vigilant symbol of our faith in the future.

How much does the building itself impact the quality of learning? With so many variables in programs around our country, and in the types of facilities that house them, statistics and concrete measurements are difficult to amass. For this book, we went straight to the best sources: students, teachers, parents, superintendents, and other administrators. Many were thrilled to be in new or modernized schools; others were still struggling to teach or learn in long-outdated and ill-equipped buildings. The response to our query. "Does the school environment matter?" was a unanimous, emphatic, and often emotional "Yes!" This book recounts many of the specifics behind that resounding affirmation.

- Lanning/Howey Associates, Inc.

DOES THE BUILDING MAKE A DIFFERENCE?

"IF EVERY CHILD
COULD COME TO A
SCHOOL LIKE THIS,
THE WORLD WOULD BE
A BETTER PLACE."

-Jim Bickley, Lourth-Grade Teacher, Alum Creek Elementary School, Ohio

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IF I DESIGNED A SCHOOL IT WOULD HAVE LOTS OF BOOKS. CHALKBOARDS. AND MARKERBOARDS, à football field, a place for art, computers with Math Blasters and Encarta. AND IT WOULD BE A GREAT BIG BUILDING...WE WOULD HAVE MONKEY BARS EVERYWHERE ON THE INSIDE AND USE THEM TO GO TO OUR ROOMS...there would be a big curly slide to slide from the indoors to the outdoors, elevators and escalators. A GLASS ROOF ALL THE WAY ACROSS THE BUILDING, AND LOTS OF SUNLIGHT."

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DOES THE BUILDING MAKE A DIFFERENCE?

Surveys, small-group discussions, and planning workshops help to surface priorities of teachers, administrators, and parents prior to designing a school. In the fall of 1990, the community of Hammond, Indiana. 25 miles east of downtown Chicago, initiated a building program for three new elementary schools to replace aging and severely overcrowded facilities. District faculty and administrative staff readily undertook the challenge of planning for the new schools: completing surveys, attending workshops, and participating in interactive discussion sessions and design charettes aimed at addressing facility needs. In particular, the group focused on how the buildings could be designed and equipped to best meet instructional objectives.

PREIMINARY PLANNING METTING

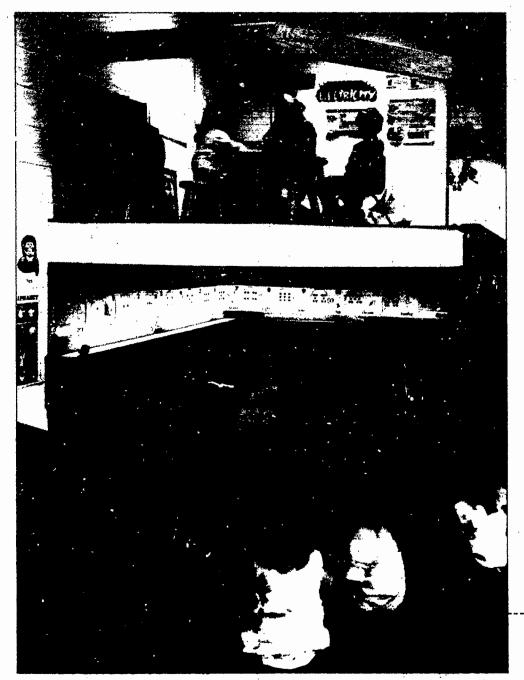
"At first, we were easy!" comments Katherine Stahl, a kindergarten teacher at Maywood Elementary School, the third of the schools to be completed in Hammond. "We just wanted electrical outlets.

But we were encouraged to think creatively about how the building could be designed to help us teach—to think about issues of daily instructional needs, storage, circulation, layout—all the things that would make us more effective.

"Now our school is a wonderful place. We get to do on a regular basis what other teachers might have to plan months for. In an old building, you might get to do a cooking or special science project once a year.

because of all the effort it took. Or if you wanted to put on a program, you had to schedule the gym months in advance because we lacked dedicated, flexible facilities. Now we have a gym and a commons. We can open up our classrooms and team teach. We can phone

parents from our rooms or easily check messages with voice mail. We can send e-mail to other teachers, or check resources in the media center from our computers. All of our materials are accessible, and we have the equipment we need. We do things every day, that other teachers only dream about.



Children at Morton Elementary School in Hammond, Indiana (pictured), as well as nearby Edison and Maywood, have an opportunity to learn in well-equipped, flexible classrooms. Most classrooms accommodate a variety of activities and scating arrangements, allowing for a number of "centerx" of learning. "The only things that stop us in this building are time and energy," says Katherine Stahl, a kindergarten teacher ut Maywood Elementary School. "We just get to the point where we finally say 'we can't do anymore today-we have to go kome?"

DOES THE BUILDING MAKE A DIFFERENCE?

Today, as educators seek to prepare children for the 21st-century workforce, many of the nation's 80,000 public schools are confronting the challenges of modernizing outdated facilities. "School facilities that can support education reform activities and communications technologies will not resemble or operate as schools built in the 1950s," notes the United States General Accounting Office (GAO) in its April 1995 report, School Facilities: America's Schools Not Designed or Equipped for 21st Century.

According to the GAO, more than \$112 billion is currently required to repair or modernize public schools throughout the nation. Often, the most significant barrier to educational reform and fulfillment lies in utilizing contemporary technology—specifically, a lack of technology infrastructure such as conduits and raceways for computers, modems, phone lines, electrical wiring, and fiber optic cabling. While most U.S. schools report that they have adequate or more than adequate resources in computers and related equipment. administrators point to a lack of facilities infrastructure to accommodate these resources. In some schools, computers lie waiting in boxes until upgrades can occur. 1

Yet in many school districts throughout the country, facility problems involve more fundamental and pressing situations: removing asbestos that still lies embedded in building materials, eliminating lead from water or paint, repairing plumbing and roofing failures. and frequently, relieving extreme overcrowding. Districts also report that they lack essential facilities, such as large- or small-group instruction areas, science labs, storage and display space, counseling offices, well-equipped media centers, or space for beforeand after-school care, that are critical to instructional and support programs.2

Dr. Robert MacNaughton, superintendent of the Penn-Harris-Madison School Corporation in Indiana, comments that today it is more imperative than ever that educational facilities support--not hinder--the instructional program: "We need to meet the educational needs of tomorrow, or we're shortchanging the community," he says. "The real world

THE OLD SCHOOL:

"In our eld school. the kindergarten classrooms were far apart. We couldn't collaborate."

THE NEW SCHOOL:

"Today, we're teaming and doing more cooperative learning. We're able to share resources, and support each other more."

—Katherine Stahl, Kindergarten Teacher, Maywood Elementary School: Hammond, Indiana

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April 1995 GAO/HEHS 95-95

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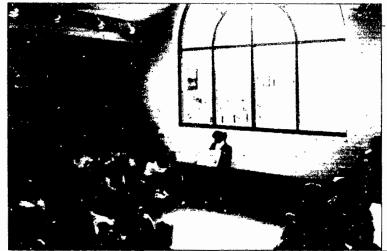


Classrooms at Springfield Elementary School in Michigan City, Indiana, feature flexible computer lea wing centers.



Children at I lint Luke Elementary School in Valparaiso, Indiana, enjoy a music room that offers built-in, carpeted visers; ample shelving and cabinetry; and a carpet with a keyboard inset.

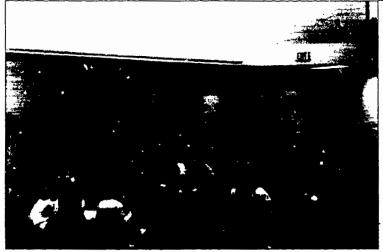
DOES THE BUILDING MAKE A DIFFERENCE?



A recessed reading area at Three Creeks Elementary School in Lowell, Indiana, allows students to read quietly or enjoy a group storytime in a cozy, smulit corner of the media center.

Outdoor playgrounds provide vitally needed space for children to exercise, socialize, and explore. The play area at Ulint Lake Elementary School is easily accessible from classroom areas, and features a variety of play surfaces; challenging equipment; and secure, landscaped grounds.





"Children are mobble to sit in their seats all day. They need to be able to move around, explore, try hands-on activities." comments Julic Adams, a fifth-grade teacher at Horizon Llementary School in Granger, Indiana. Here, common areas within clussroom pads enable students at I lint Lake Llementary School to participate in a variety of small- or large-group activities. works in teams, which calls for flexible space. The real world uses technology. And then there are the little things like wiring for telephones. Schools are just about the only places where you still find professionals trying to function without a computer or a telephone."

In today; global economy, education and the process of preparing students for the rigors of a competitive marketplace have become even more critical. "I've had parents come to me and say, 'Please teach my kid everything you possibly can because I can't do it." says Linnette Allen, a fourth-grade teacher at Maywood Elementary School. "I've taught kindergarten and even then these parents have said. I can't do it.' If the children go home and they don't understand an assignment, they can't get their parents to help them. They have to learn it right here in school. Now, we have the facilities, the kids are getting what they need, and we can meet that challenge."

What means the most when it comes to providing the best possible education? Nearly everyone—whether a parent, a community member, a school principal, or a third-grader will answer without hesitation. "the teachers." But do the buildings themselves make a difference? Are faculty and students more motivated in schools that are brighter, more spacious and flexible, and better equipped?

Pam Coleman, a kindergarten teacher at Twin Valley School in West Alexandria, Ohio, is certain of her response. "I'll never forget the look on my kids' faces when they saw their new school, and walked into their new classroom. I felt it too. There wasn't space for my class in the old school, so we were isolated in a church basement without windows. I felt like I had moved from a dungeon into Cinderella's castle. That new classroom made all the difference to those children—the amount of space, the light, the colors. Their attitude about school changed from that moment on."

THE OLD SCHOOL:

"We were so overcrowded here, we had our computer lab in the hallway. There was simply no other place for kids to use the computers. We also had to use the hallways for conferences."

THE MODERNIZED SCHOOL:

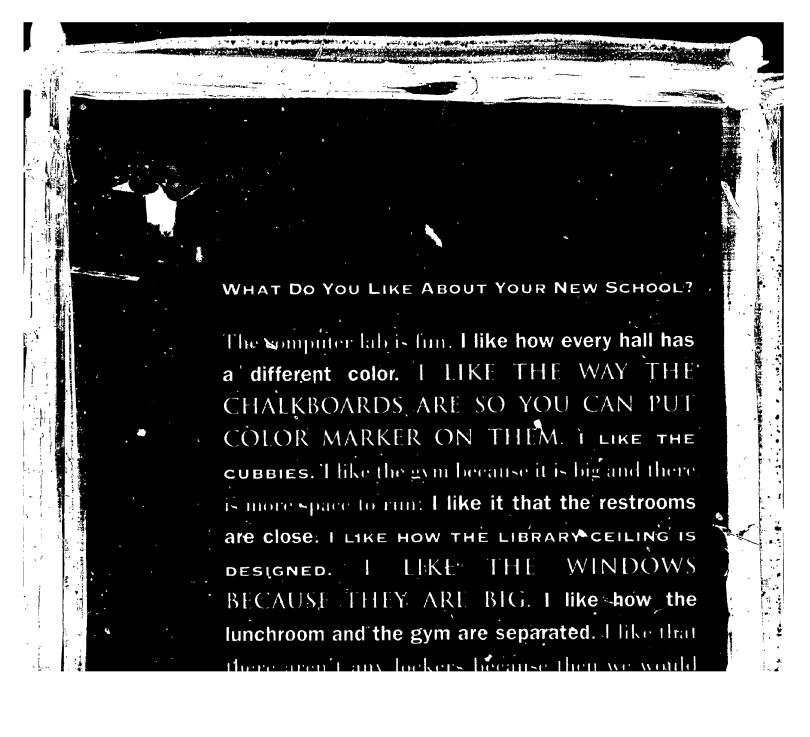
"Our new computer lab enables us to bring more kids in, and the time spent is much more valuable. We're also able to hold workshops there for our teachers. On a daily basis, I see my staff looking for new and better ways of doing things, because they're working in new and better facilities. There's so much pride here now."

> —Steven E. Carroll, Principal, Hillcrent Elementary School; Delphi, Indiana

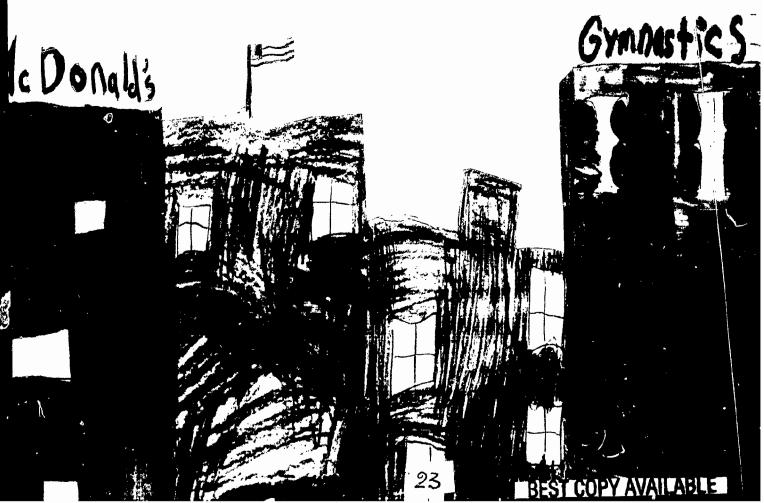
WHAT KIND OF PLACE IS THIS?

"BUILDING A SCHOOL IS DIFFERENT FROM BUILD-ING A STRIP MALL. A SCHOOL NOT ONLY HAS TO BE FUNCTIONAL AND ECONOMICAL, IT HAS TO GIVE A SENSE OF SELF-WORTH TO THE STUDENT. IT HAS TO SHOW THE COMMUNITY'S COMMITMENT TO EDUCATION."

→Tom McLelland. Lucilities Planning Specialist. Lalusia County Schools, Florida







WHAT KIND OF PLACE IS THIS?

THE OLD SCHOOL:

"Space was very limited in our old building. Our classroom was wall-to-wall chairs. We were always fighting to get through the chairs."

THE NEW SCHOOL:

"Just having more space is a big plus. Kids control themselves better. I can set things up in centers—the listening center. the math center. We have circle activities. It really helps with discipline."

—Dianne Gabel, Kindergarten Teacher, Taylor Road Elementary School, Beynoldsburg, Ohio Ask a group of children to think about designing a school. Within a few minutes, their imaginations will take flight and ideas will flow about what to include: carnivals with ferris wheels, aquariums, petting zoos, candy stores, waterfalls, fast food restaurants, water slides, gymnasiums with countless basketball hoops, and giant screen TVs. Elevators and escalators inevitably top the list.

Yet before they let their imaginations run wild, children will frequently offer a wide-ranging yet practical list of what a "good" school should have. Simple details mean a lot: short hallways, a place to hang coats and backpacks where they won't tumble to the floor, clean restrooms, plenty of water fountains, and chairs that are just the right size. Many children mention wanting windows and sunlight. Media centers ("with lots of books") and computer labs ("with computers for everyone and lots of printers") are also priorities. For many children, air conditioning is the single most important feature they would have in their schools.

It is difficult to imagine a more important and far-reaching social priority than fostering a high level of safety, comfort, and motivation for children in schools. Children who feel threatened, disoriented, uncomfortable, crowded, or bored in school are certain to be more challenged in their ability to learn and pursue their potential. The irony of the condition of our nation's schools today is the degree to which children either feel daunted or uninspired by their school, or to the other extent, excited and motivated to learn and to interact with other students and adults.

7

Elementary schools come in a surprising variety of shapes and sizes. Grade configurations, which include kindergarten housed in one facility with grades one through five or six in another, kindergarten through grades five or six all in one facility, or combinations of K-3, K-4, and so on, impact the size and layout of a school and become a driving

factor in design early-on. A school's site also plays a critical role in how the building takes form: tight urban sites, for example, may require construction of multi-level schools; while sprawling sites allow for one-floor configurations, which are often preferable at the primary school level.

Educational approaches, such as team teaching, also influence the configuration and layout of a school. The academic areas of many schools, for example, are designed in pods or corridors that cluster grade levels and allow for more interaction among classes. Campus layouts may take a more linear form, or cluster a small group of individual buildings. These schools are more prevalent in warm climates, where schools can take advantage of exterior corridors and walkways as part of the circulation plan.

Deborah Bergeron, principal at Taylor Road Elementary School in Reynoldsburg, Ohio, emphasizes the importance of how a school is laid out: "I like the flow of this building," she says. "The noisy areas are kept together—art, music, the gym. The library is in a central location, and it's the first thing people see when they walk into the school. It's nice and airy and light. The office is right next to the entry, and it's open and accessible. I also like the width of the hallways—two classes can pass without the kids touching each other." Marlie Griffin, a teacher for learning disabled students, adds that Taylor Road "has enough flexibility to accommodate changes in our program—if the complexion of a grade level changes, or we want to have larger groups or team teaching."

Building exteriors are also an important aspect of design, as school systems seek to portray "friendly" facilities that aren't intimidating to children. With many elementary schools set in the midst of residential neighborhoods, the massing, scale, and materials of a school can be vital in successfully blending the school into the neighborhood and projecting a welcoming environment.

Color and light are also integral to the success of a school building. Both are important

THE OLD SCHOOL:

"Our building was one long hallway. We used to say we should skateboard down the hallway."

THE NEW SCHOOL:

"This school is much more organized and accessible. It's comfortable and quieter. Visitors are in awe of the layout. And everything has its place."

> —Barbara Woodland, Third-Grade Teucher, Taylor Road Elementary School: Reynoldsburg, Ohio

WHAT KIND OF PLACE IS THIS?

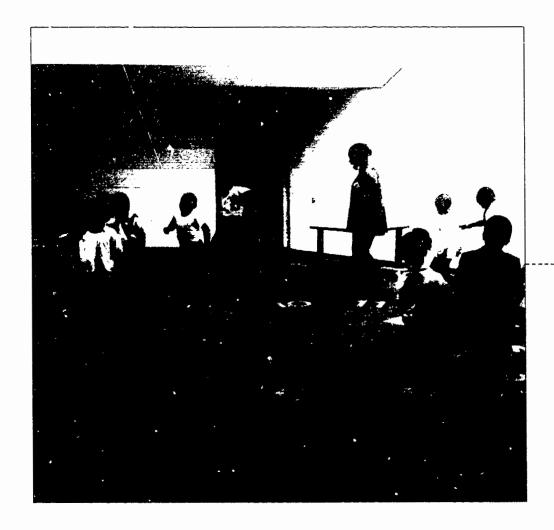
to offset the potential institutional feel of an educational facility: vibrant colors enliven classrooms and hallways, and sunlight brightens spirits. "The color scheme in our school is wonderful," says Dawn Tufto, a fourth-grade teacher at Taylor Road Elementary School, where academic pods are color coded in soft, warm hues. "Our kids know how to find the blue pod," she adds. "We even ordered shirts to match the colors." Sandy Kramer, of the newly renovated Conger Elementary School in Delaware. Ohio, points out, "If I want to send a child to the office, all I need to say is 'Follow the green line all the way down the corridor, and you'll come to it." It's a lot easier on both of us."

The details of a school's design and its furnishings can be instrumental in helping children feel comfortable and welcome. Are countertops, shelves, desks, and tables the right height for young students? Can they find their way around a building without becoming confused? Are chairs comfortable and an appropriate size? Can students reach faucets, water fountains, coat hooks, and cubby spaces? Can they sit comfortably on carpeted floors or risers?

Comparing his former school to his new environment, Clark Lacy, a fourth-grader at Alum Creek Elementary School in Lewis Center. Ohio, points out the importance of many of these distinctions. "I like the color coding on the floors here," he says. "At first, I kept going around the library in circles, until I found out the door is in the red hallway. Now I know to look for the red. The hallways here are shorter, too. I used to have to walk a long way. I also like the reading pit and the chairs in the library. The chairs are smaller and they're padded and they fit better."

The impact of the quality of school facilities extends to the faculty as well. "I'm just thrilled to be in this new school," says Jim Bickley, a fourth-grade teacher at Alum Creek. "How much better is it than my old school? Let me count the ways!" He points to the

overall inviting atmosphere and spaciousness, as well as the details that facilitate daily instruction—ranging from variable lighting systems to sinks in the classrooms. "I can't help feeling good coming into my room," Bickley says. "A couple of my kids are having trouble at home, so it means a lot to me to have a school that's welcoming. If every kid in America could come to a school like this, the world would be a better place."



Children at Mayrrood Lifementary School in Hammond, Indiana, enjoy movement-based learning activities in an extended learning area adjacent to classrooms.

WASHINGTON IRVING ELEMENTARY IPS #14; INDIANAPOLIS, INDIANA

Set in the heart of an aging, urban neighborhood in downtown Indianapolis, Washington Irving Elementary IPS '14 presented many challenging site issues during its design, "We wanted the school to be respected and a focus in the community," says Principal Elizabeth Odle—"It needed to blend with the neighborhood and the houses surrounding it, yet rot be on a pedestal."

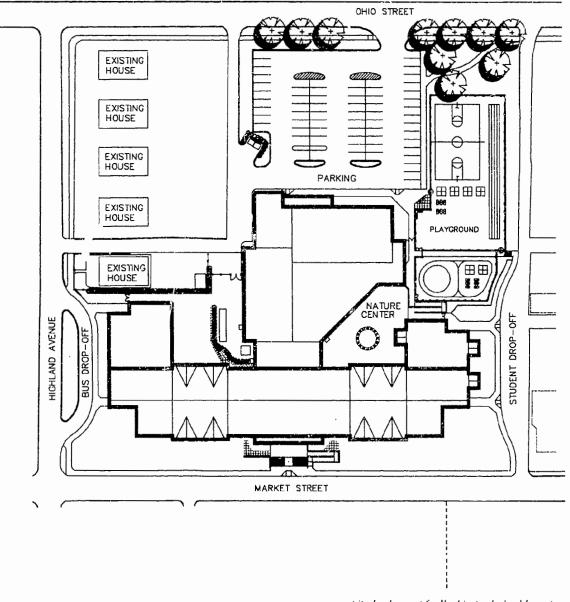
Extensive use of brick and vinyl siding

helped bring a residential expression to the school's exterior, set closely among a community of turn-of-the century homes. Separation of traffic was also a key issue: solutions included conversion of an adjacent alley to an avenue for the kindergarten drop-off area.

Inclusion of both a parent/PTO room, near the main office, and a community room on the public wing of the building provides ample space for parents and other volunteers. The parent room includes an area for hanging coats, a kitchenette, a restroom, and work space.

Washington Irving's educational program also encompasses preschool, which has its own classroom adjacent to the two kindergarten rooms. "This is a clean, bright environment," says Odle, "It has given everyone here a greater sense of personal respect and pride."





Massing and use of materials in the design of Washington brying's exterior reflect sensitivity to the turn-of-the-century homes in the urban neighborhood. Site development for Washington Irving Elementary IPS*14 provided separate bus and parent drop-off areas. Ample purking in the rear of the school provides community access to the public realm of the building. Sincluding the gymnasium and the community voom.

WHAT DO WE DO WITH THE COATS?

A percential difference of faction to create confusion for students and he algebras for teachers it appropriate space is not included if of space of the rooms. Many elementary schools show the decent metal lockers, because of the noise they except fund the potential for pinched timeer. Instead, printing schools are spring to a variety of renthly equivalent intelligible pays of cubbics within a classical or larger entitle flations, or much counts.

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Grades one through five at Anna Llementary School in Anna. Ohio, feature storage areas and cubbies separated from the classroom by a partial wall. Classrooms for kindergavien studrats below include cubbies within the classrooms.

Hows of wooden pegs adjacent to the cafeteria at New Britton Llementary School near Fishers, Indiana, allow students to exit the cafeterin and head struight for the playground. Lxposed hooks or pegs should always be positioned to avoid eye-level contact with children.



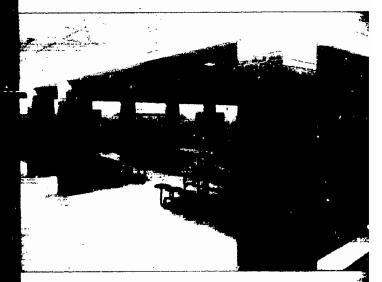
"LET'S EAT!"

I muchtime gatherings mark a daily highlight for many young children, as caterorias, like playgrounds, present mistractured and open settings for social interaction.

At the elementary school level, many caterorias also serve as multi-purpose rooms that house school assemblies and small scale productions. Adjacent storage rooms and portable furnishings make rearranging the cateroria space easier, enabling staff to set up for a variety of programs and meetings. Circulation and flow are also critical factors in designing cateroria spaces. Logical quenting pattern options help prevent children from gathering in crowds or josiling each other as they go through the cateroria line and keep the lunch born meeting smoothly

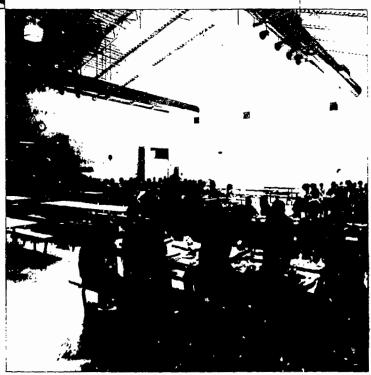
Many schools, such as Horizon Hemeatary School in Grauger. Indiana, are now opting for round tables in cafeteria settings. The tables feature legs with castors and can be falded in the middle, facilitating transport and storage. The round tables offer a less institutional scating arrangement, and can help with noise control: "An interesting feature of our new cafeteria has been the change in the scating." says Steven E. Carroll, principal at Hillerest Llementary School in Delphi, Indiana. "With the circular dining tables, instead of the long ones, the noise level is much better—it's more conversational."

t Indian in Acid Particul Francisco School with at Kin Jodels with all in holds should service as apposed to be indicate in high present while the remaining problem, into each other by execution, small distances. Them can think a Preparelly manifolds in the other of 12 or 11; but the fields should state to a Special mark in thous should can appropriate to most accessibilities requirements. Sometiment with tree manifolds to the excessibilities requirements. Sometiment with tree manifolds for the steeped particies helps with more control and is an executed described to the execution of the second of the execution of the procedure the execution of the execution of





Weston I lementary School, in hiday City, Michigan, teatures bench seating with long tables in the enjoierm. Unstabilishant iten show a preference for the tixed benches, as the streamtined design simplifies the choice of cleaning floors each day.



TIMMONS ELEMENTARY SCHOOL; CHAGRIN FALLS, OHIO

Parents want to make sure their children are in a safe environment—a warn, and narriting environment," says Dr. Craig Phillips, former principal of Timmons Elementary School in Chagrin Falls, Ohio. "This building catches your breath the moment you walk in—it welcomes you."

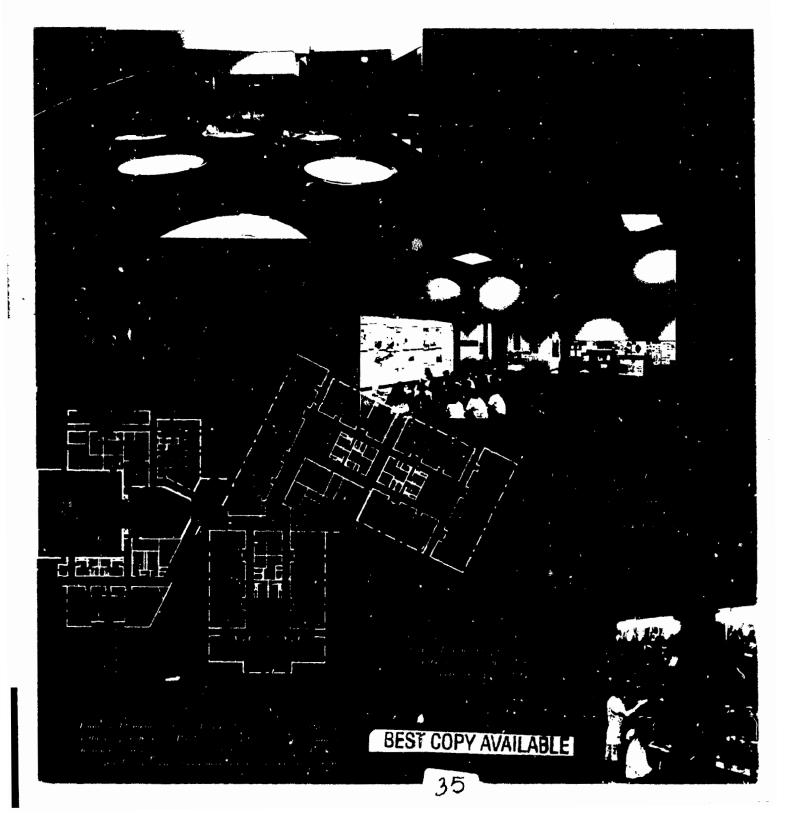
Designed for 750 students in grades 3-5. Tunmons Elementary School features three eparate classroom pods to accommodate each grade level. Each pod contains its own

group activity area, restrooms, and teacher workroom and office. A library/media center is located in the middle of the academic wing facing the wooded area. Noisier areas, including a gynmasium that seats 700 people, are segregated from the classroom wings.

Each pod is color coded in bright blue, red, or green; and each features a different shape as an accent: circle, square, or hexagon. Colors are repeated in the school's

carpeting, tackboards, and signage. Even the warm beige paint features a multi-color "speckled" effect, diminishing the institutional feel of masonry block walls. "We love the metrior of this building," Phillips says. It not a Taj Mahal in terms of expensive materials. We used basic building products—nothing unusual—and translated those into a very exciting





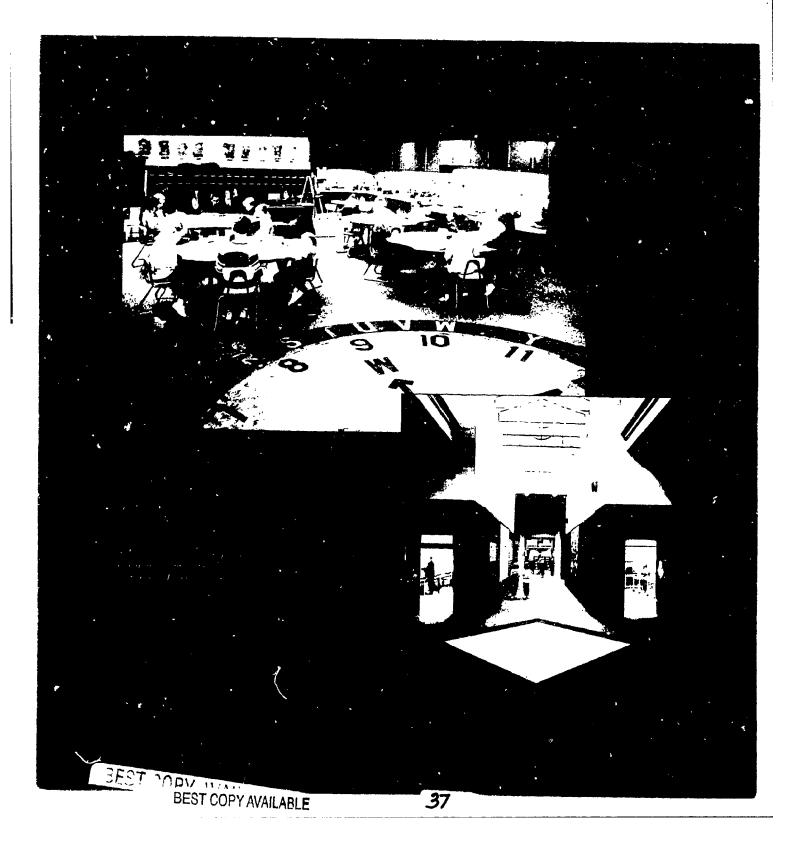
WHAT KIND OF PLACE IS THIS?

Carpeting in classrooms at Rorland I lementary School in Indiay City, Michigan, helps with noise control. Sled-based chairs glide easily over carpeted surfaces and work well in a classroom setting. "Carpeting is an educational tool," says from Smith, principal at North Hurrison Unionality School in Humsey, Indiana, "It's quieter, than children also spend a great deal of time on the floor—corpeting greatly expands the Fund of work they can do."

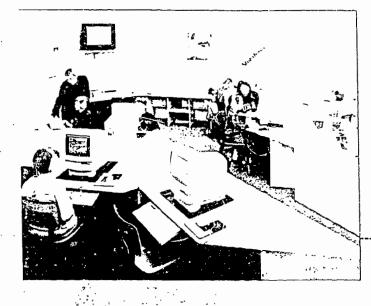


Che medin center at Ac Partlon Elementary Schowatures light out furnituna finishes, setting a nearmeting lone for the spin-Portenda center has sufficient placeureles that creasion accents and mark to ention at additional this [anger 14].

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WHAT KIND OF PLACE IS THIS?



Flexible workstation furniture allows for a variety of room arrangements in this computer lab at Springfield Ulementary School in Michigan City, Indiana.



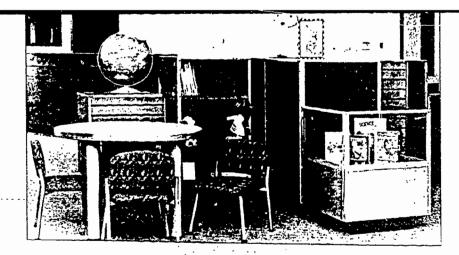
Light oak carrels provide comfortable workstations within the modia center at Woodbrook Elementary School in Carmel, Indiana.

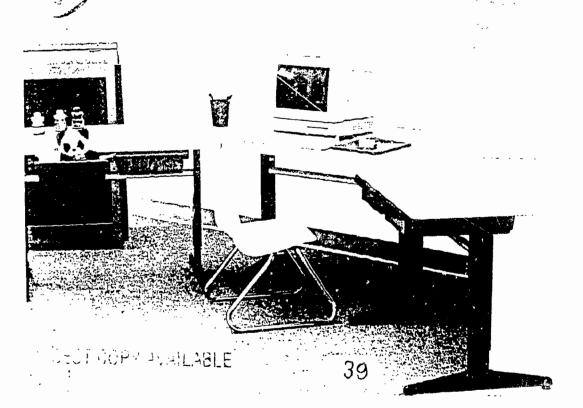
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in primary colors. The units offer storage and visual interest at an appropriate height for young children, and also serve as partitions for subdividing larger spaces.



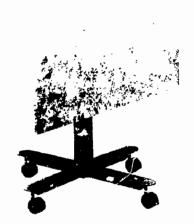


Custom-designed farniture solutions for elementary schools include components such as adjustable height workstations with storage bins. The mobile tenching cart at left features a chalkboard on one side and a markerhourd on the inside of the lid. The curt's other side includes storage for books.

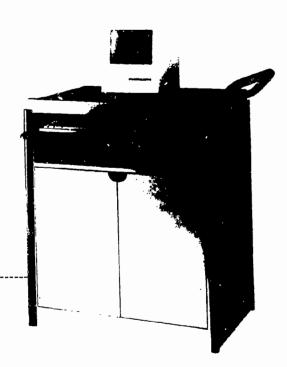




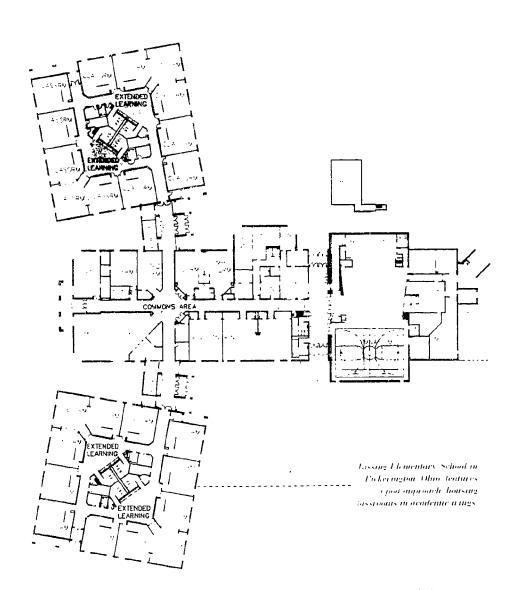
lables with folding mechanisms, as opposed to a fixed base, are available in caund, square, and rectangular options. The durable tables also come in folding or tilt-top options, and can be ordered with custors. The tables also feature a hydrantic lift avedanism that enables the height to be unjusted.



A portable cart on casters enables teachers to more computer n orkstations from room to coota on castors. With the doors open, a teacher can draw up a stool to sit at the unit.

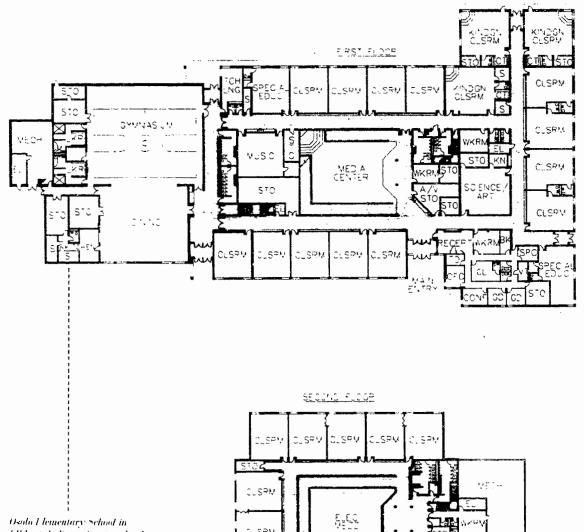


WHAT KIND OF PLACE IS THIS?



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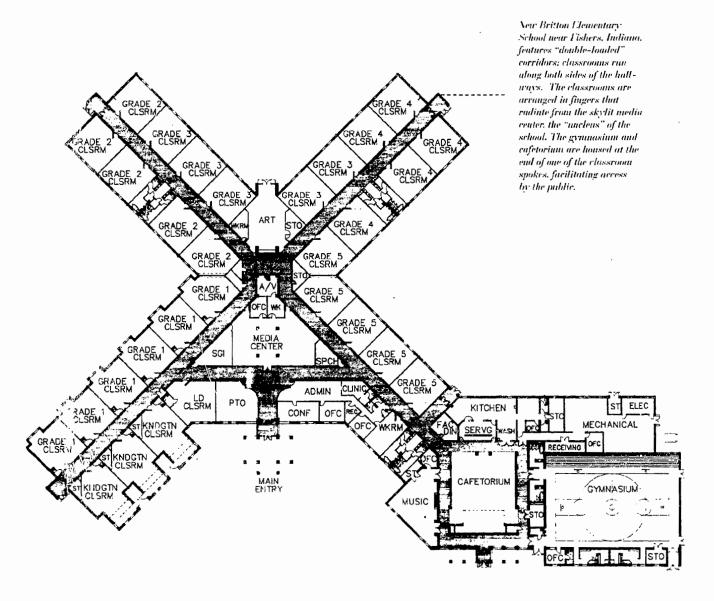
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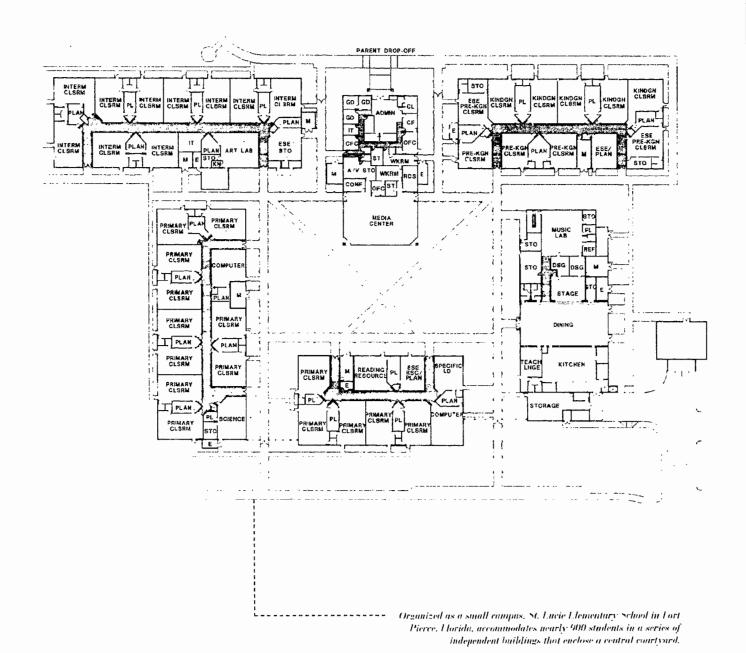
C. SPM

Osolo I lementary School in I lkhart, Indiana, is a two-level school with a "Indder" or "II" floor plan layout. Classrooms surround the media center and other core activities.

C. SEV

WHAT KIND OF PLACE IS THIS?





The sign at North Hayreson Flourestary School in Flourest, Judiana takes whemtage of the school's sloped site. The energyefficient hubbing is set into the full-side affecting in optimal shelter in the gring of turnalows and intriguing votage students with its design grear in and year out.

> Many southern schools, such as McNah I Jementary School in Pampana Beach. I Jorida, take advantage of the warm climate by incorporating exterior coveidors or walkings as a part of the occoult circulation plan

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The grathe massing and residential courses the certifier destinate the Cherry level I found that School appends to the course of County Indiana.

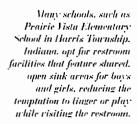
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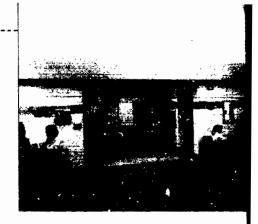
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School mascuts and logos can be silk screened onto plastic laminate on tables or used in signage details.





A bright, open lobby at Anna Elementary School in Anna, Ohio, welcomes students, parents, and community members. An electronic information kiosk offers highlights of the school's activities as well as a flo w plan to guide visitors.



Children at St. Lucie
I lementary School enjoy
comfortable cushions in the
media center. A brightly
colored map of the United
States is featured on a
small accent rug.



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KIDS AND CLASSROOMS

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"I'LL NEVER FORGET
THE LOOK ON MY KIDS'
FACES WHEN THEY
WALKED INTO THEIR
NEW CLASSROOM...
THEIR ATTITUDE ABOUT
SCHOOL CHANGED FROM
THAT MOMENT ON."

-- Pam Coleman, Kindergarten Teacher, Tivin Yalley School, Ohio ESCALATORS....SO VOI COULD HAVE ESCALATORS...SO VOI COULD HAVE five stories...and a ramp and an elevator for the disabled... HUMONGO CLASSROOMS...COMPUTERS IN YOUR ROOM...a big commons...bumper cars... AN INDOOR PLAYGROUND SO IF IT RAINS YOU CAN STILL PLAY...more play areas for the first graders because the first-graders have more energy than anyone...BIG WOODEN KENCES TO KEEP THE SOCCER BAKLS FROM GOING OUT...a built-in fair with a ferris wheel and rides so if you were quiet all day, the next day you could go to the fair."

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KIDS AND CLASSROOMS

THE OLD SCHOOL:

"In our old building, we had regular closets for storage, and everything was stacked in boxes. So you hoped you could remember to get whatever you needed out after school—dig out that one thing you needed and then use it with the kids. You didn't have any accessibility or organization."

THE NEW SCHOOL:

"The storage in and near our rooms makes such a difference. You know, teachers all want to teach the moment—sometimes something crops up, and you'd like to be able to reach right there and get what you need. Now you can just reach for it; it's not packed away in a stack of boxes."

— Katherine Stahl, Kimlergarten Teacher, Maywond Elementary School: Hammund, Indiana In a competitive, high-tech working world, lifelong learning has become imperative. Colleges and universities are welcoming students of all ages to pursue degrees, post-graduate work, and continuing education courses. Many communities offer their own public education programs for adults; and U.S. businesses, industries, and government agencies are investing billions in professional development curricula for employees through educational institutions and internal training initiatives.

Perhaps the most important, bro reaching, and vital instruction of all, however, takes place day after day, year in and year out, in elementary school classrooms. As children begin formal education for the first time in their lives, the world of the primary school classroom holds tremendous power and promise. In many ways, the classroom environment impacts what and how much young students learn in those early, critical years; and helps to shape their views of education, society, and what their own futures might hold.

Decades ago, the rooms and related spaces that housed these potent learning activities consisted of little more than four walls and a tile floor. Furnishings typically included wooden desks, chairs, and bookcases; from there, imaginative and industrious teachers saw to it that the rooms functioned as smoothly as possible—energetically supplying their own brand of classroom personality and efficiency to bring barren classrooms to life.



Teachers agree that sinks in classroems, such as this one at New Britton Llementary School near Lishers, Indiana, are a big time-surer. Teacher worksträints, computers, and important files are kept army from the sinks. Today, in new or modernized facilities, teachers find that they can rechannel that energy into more vibrant, meaningful instruction and interaction with their students and other teachers. Where time and effort were once spent in rearranging and setting up rooms to accommodate a special project or group activity, teachers are now able to move easily through a number of activities—storytelling, artwork, computer lessons, and science projects—all within the same classroom and without the disruption of moving heavy furniture, searching for supplies, or setting up and dismantling equipment. Classrooms are flexibly designed to accommodate simultaneous activities, and to embrace both small- and large-group activities.



Children at St. Lucie Llementary School in Fort Pierce, Florida, enjoy a variety of learning centers in their classrooms.

I leribly designed classrooms at Washington Irving Llementary IPS '14 in Indianapolis, Indiana, feature a mix of floor surfaces and a variety of cabinetry and shelving. Many teachers use low-rise book shelves and display units as dividers to partition rooms and create cozier spaces.



KIDS AND CLASSROOMS

THE OLD

The acoustics were merrible in our old elassrooms. We had high ceilings and wood floors."

THE NEW -School:

"With the carpeting and the acoustics we have now, teaching is much easier. It's less tiring—we don't have to teach by yelling. I think it really changes how children perceive our teachers."

- Alan Jackson, Principal, Suncrest Elementary School: Frankfort, Indiana In many ways, contemporary classrooms differ dramatically from those in schools built years ago. Some of the differences stem from federal and state guidelines and regulations that stipulate, for example, larger classrooms, classrooms that are fully accessible, and minimum requirements for natural light. Classroom design has also evolved in response to technological demands, including use of computers and multimedia instructional tools.

Many significant changes have also emerged over time as a result of teachers participating in the planning and design process, and coming forward with practical ideas for improving the basic structure, layout, finishes, and furnishings of a classroom. These concepts and suggestions often lead to greater flexibility, productivity, and efficiency within each room. Cabinetry, shelving, flat files, and other storage spaces; sinks; cubbies for coats and backpacks; flexibly designed furniture; display areas; variable lighting; and a variety of floor treatments now support a broader array of learning activities.

"I was in a modular classroom last year," says Sara Keaney, a first-grade teacher at Alum Creek Elementary School in Lewis Center, Ohio. "I'm thrilled to be in my new classroom. I can arrange the furniture just the way I need it; I have more storage: I can display all kinds of things on the walls. There's an opportunity to be so much more creative."

"Good facilities are an 'enabler,'" emphasizes Monty Schneider, superintendent of the North Harrison Community School Corporation in Ramsey, Indiana. "They enable teachers to do so much more—and it's not just what they do, but how they're able to do it. We have a 'semi-open' classroom concept at North Harrison Elementary School. With movable walls between the classrooms, teachers are able to bring classes together and share resources and expertise."



Two kindergarten clussroom additions at Woodbrook Llementary School in Carmel, Indiana, feature well-lit "story stairs." The connected clussrooms allow kindergarteners from both classes to share computers and other resources. Kindergarten classrooms are typically larger than rooms for other elementary school clusses, with the average size running 1,100 square feet. Classrooms for grules one through six are usually closer to 900 square feet.

Operable walls at the newly renovated Woodbrook Hementary School after the flexibility to open up or close affectassrooms from one another. "Before the renovation, our classrooms were completely open, and it called for a lot of compromises," says Principal DeWayne Akin. "If one teacher were, doing a Jun activity, the next teacher had to do it as well. I veryone had to do a quiet activity or a noisy activity together. Now there are options to work independently as a class or as a larger group."

KIDS AND CLASSROOMS

THE OLD SCHOOL:

"Parents used to write notes to us asking. "Why are my kids coming home from school so dirty?"

THE NEW SCHOOL:

"Everything is much cleaner here. Teachers actually feel that they can dress up a little more. The kids stay cleaner, even when they're sitting on the floors. And they seem to have taken ownership—they try not to track in mud or put their hands and feet on the valls. I've really i sticed a change in their attitudes—I think there's a lot of peer pressure to keep the school looking nice."

— Mary Jo Giesler,
First-Grade Teacher,
Suncrest Elementary School;
Frankfort, Indiana

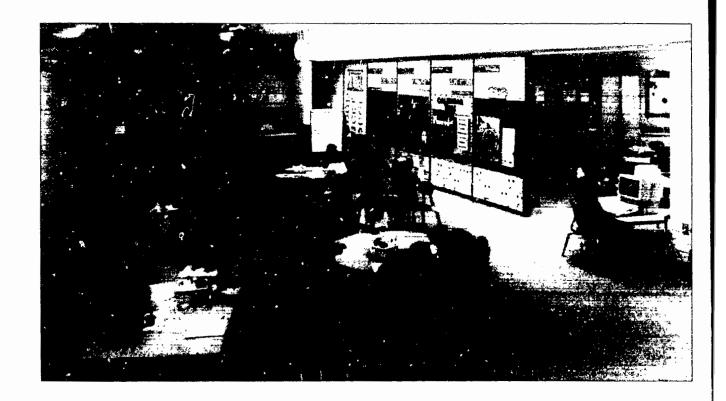
Tom Smith, principal at North Harrison Elementary School, elaborates on the team teaching approach: "We found that our teachers tended to be isolated," he says. "There was very little cooperation. Since building this school, our pod structure for clustering grade levels and the movable walls in the classes have really changed that. The teachers have come to rely upon one another, and take responsibility for more children. Discipline has improved. Where two classrooms are open to each other, the students are able to get the best of both teachers."

"Our operable walls are the biggest bonus we have," says Shirleann Fahrenholz, a first-grade teacher at Twin Valley School in West Alexandria, Ohio. "By opening up our rooms, we can take advantage of so much more space. The teacher in the next classroom and I partially open up the wall between us for special project days. She sets up a couple of stations and I set up a couple of stations, and then the kids rotate around to different activities. We recently had a fall theme, where we did finger-painting and seasonal crafts. Instead of trying to set up four stations in each room, we only needed to set up two each. There are more kids involved, but it's still quieter and less hectic. They move around so easily."

Kent McIntire, principal at Twin Valley, points out that the options of opening the walls partially or fully, or merely opening a built-in "pass door" in between, provide teachers with the flexibility to try a number of approaches. "But it's quiet when the wall and door are all the way shut—I'm amazeJ at that," he says. Fahrenholz adds that the pass door is a plus when one teacher needs to leave his or her classroom briefly: "It may not seem like a big issue when we need to go to the office or the restroom for a few minutes, but when you have 24 childre, in a classroom, it does make a difference. Now we can just open up the pass door and give a quick wave to the other teacher, and she'll know to keep an eye on the kids. You don't have to pace the hall between two classrooms any more."

Jim DuBois, principal at Elm Road Elementary School in Osceola, Indiana, also believes that the design of a school can help prevent "teacher isolation" and facilitate collaboration. During a comprehensive modernization and expansion. Elm Road transitioned from a cramped, circa 1950s layout with segregated classrooms to a facility that embraces educational flexibility. Academic activities are organized into learning "teams" of four or five classes, often involving group learning activities that bring several classes together. Each grouping of five classrooms is organized around an extended learning center, with operable walls between classrooms that allow restructuring of the space as needed.

Computer resources are shared between two classrooms at Joan Martin I lementary School in Hobart, Indiana. The operable walls also provide extensive display space.



KIDS AND CLASSROOMS

THE OLD SCHOOL:

"In our old school, we used to get so hot. We didn't have air conditioning."

THE NEW SCHOOL:

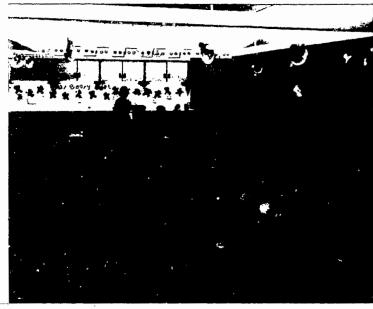
"It's easier to work now because it's not as hot!"

— Deanna Hoy, Fifth-Grade Student, Twin Valley School: West Alexandria, Ohio "We have more of a sense of 'connectedness' in this school," says DuBois. "The pod concept and the extended learning areas have worked well for us. It facilitates hands-on learning." Sandra Cook, assistant principal at Elm Road as well as nearby Horizon Elementary School, points out a variety of activities as she walks through each of the pods, which together form a seamless loop from grade level to grade level. "The walls between classrooms are often open," she says, and points to the numbers of children who spill out into the extended learning centers as well. "The kids can work independently or in groups on math or science projects, computer programs, reports... we also have parent volunteers in here on a regular basis working with the children, typically in the extended learning spaces."

Many teachers and administrators note, as Cook does, that open, flexible learning spaces are not only more conducive to active learning, they're attractive to the community and in particular, parents and other volunteers. "Our school is very parent-friendly, and community-friendly," she says. Jim DuBois adds, "One of our goals for student enrichment has been enhanced involvement of parents. We want to reach out to the community, and we want to be sure that parents feel welcome here."

"I didn't realize what an impact a classroom could have on children until we moved into our new school," says Roseann Williams, a teacher of learning disabled children at Twin Valley School. "Our kids are doing better and they're much more attentive. It's so much more pleasant. In the old classrooms, they were easily distracted with the clutter and the problems with heating and no air conditioning. If something were happening outside—a siren, for example—they were much more interested in that. Or it would get so hot, they'd fall asleep in the afternoon. Now, they stay focused. They're comfortable. They're comfortable in their homes—why shouldn't they feel the same way at school? And they're proud of their classrooms, their desks, their work on display—they feel much more valued here."

Extensive renovations at Elm Road Elementary School in Osceola, Indiana, created lurger, more flexible classrooms.





Brightly lighted extended learning areas in each pod at Maywood Elementary School in Haramond, Indiana, allow for a curiety of instructional and play activities. The school has also set up recycling stations in each of the pods.

GIDS AND CLASSROOMS



I ofts and story pits are increasingly popular in kindergarien and many first-grade classrooms. Much like climbing a tree, the lotts enable children to explore and view their classrooms from different perspectives. Class walls surrounding the loft, such as this one at Three Creeks Llementary School in Lowell, Indiana, allow tenchers to watch over children as they play. Many tenchers reward good behavior by allowing independent play or rending time in these special areas.



Teachers at Wyandot Han Flementary School in Powell, Olino, as well as nearby Main Creek I Jementary School, find that a colorful alphabet circliic a built-in instructional tool. Created as curpet or tile insets, the circles allow for inocementbased Jearning, while also facilitating "circle time" a bivortle dudy actualy in numy classrooms. Children at Wyandot Han also enjoy bright, primary valors in classrooms



Many leachers take every opportunity to create display space, as shown above at the Whiting Athletir Complex in Whiting, Indiana, where the community's three kindergarten classes are located. A combination of tile and varpet supports a variety of actuities

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SUNCREST ELEMENTARY SCHOOL; FRANKFORT, INDIANA

"This building absorbs children." says Alan Jackson, principal of the new Suncrest Elementary School in Frankfort Indiana. "Our previous facilities were overwhelmed by the children—with noise, dirt, and crowded hallways. Now children and teachers can really be at their best."

Large enough to house 700 students. Suncrest Elementary School was completed in 1996 to replace two aging facilities—one school built in 1898 and another in 1921. The new school is designed in three wings, clustering kindergarten and grade one, second and third grade, and fourth and fifth grade. Facilities include a large media center at the heart of the school, an art room, a computer

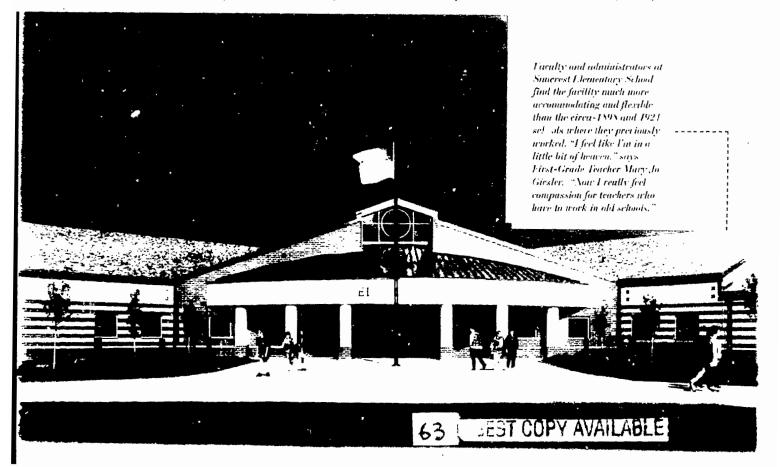
lab, a community room, a gym and cafeteria with a shared stage, and a full-service kitchen

Teachers and administrators involved in the planning process for Suncrest presented many suggestions for enhancing the building's functionality and streamlining time spent on day-to-day responsibilities. Large storage areas in each wing are also used as workrooms for class preparation. A conference room in the main office facilitates staff meetings. Small-group instruction spaces are located at the ends of corridors, permitting instructors and volunteers to work one-on-one or in small groups.

Joe Dixon, superintendent of the Community Schools of Frankfort, points out

that many of these details have made a big difference in the school's environment and to the reception it has received in the community.

"It's exciting to come here." he says, "I just like to walk in and see all the children's work displayed up and down the hallways, which is so important in an elementary school. We made decisions to have a lot of display space; to create the SGI (small-group instruction) areas that would help to bring in volunteers; and to welcome the community by setting aside space for scouting, the PTA and special classes. Our first open house was packed with people, and that excitement has continued through the year."

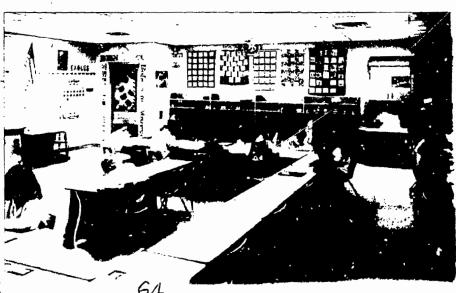




Small-group instruction areas were placed at the ends of hallways in each wing, permitting teachers and volunteers to work one-on-one with students as needed. Suncest welcomes a number of colunteers from the community, including senior citizens and representatives from local businesses. The SGI space is open and accessible, yet a partial wall defines the space and provides a sense of formality. Large windows offer plenty of natural light. "Setting up the SGI spaces here was one of the best decisions we made," says Principal Alan Jackson.

Classrowns at Suncrest support a variety of simultaneous activities—including independent desk work and computer learning—through flexible furniture arrangements, a mix of curpet and life, and ample storage space that permits casy acress to instructional tools and resources. While some teachers still prefer traditional chalkboards, many schools are incorporating white markerboards shown at far left under flag, which minimize dust and allow for the use of multiple volors and as a projection surface. I other surface is typically magnetic appropriate classroom lighting helps reduce glare. Many manufacturers now lawe combination marker/chalkboards available.

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HORIZON ELEMENTARY SCHOOL; GRANGER, INDIANA

Set in the midst of the rapidly growing community of Granger, near South Bend. Indiana, Horizon Elementary School opened its doors in the fall of 1996 to nearly 700 K-5 students. The 90,000-square-foot facility features clusters of up to five grade-level classrooms in a larger loop, as opposed to self-contained pods, allowing for flexibility in the number of classrooms assigned to a grade level from year to year.

Classroom flexibility also includes operable walls that support team teaching and large-group activities. "We often do large groups." says Julie Adams, a fifth-grade teacher. "Sometimes it looks like one big room in our area, because we open everything up to the extended learning center and move everything back. Whenever we need to talk to all the fifth-graders, we use the extended learning center instead of marching them all

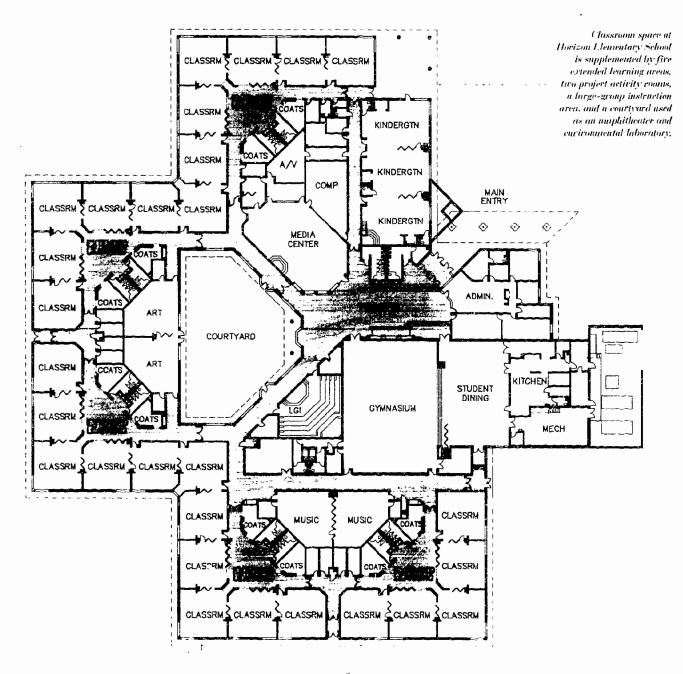
to another area."

"Our students get the best instruction from both of us." says second-grade teacher Phyllis Gartner, who team teaches with classroom "neighbor" Martha Bartels. "Each teacher can take the lead on the part they are strongest on, and the other teacher can assist or add comments. We isolate our groups for skill teaching, and do projects in smaller groups as well."



One of the three 1,200square-foot kindergartea classrooms at Horizon features a loft and recessed seating area for reading and quiet play: Storage ia the classroom includes cubbies for couts, backpacks. and gym shoes; an assortment of cabinets; and areas for children's homework and special projects. Inother kindergarten voom is designed with more tile flooring for "cref" activities. such as painting.

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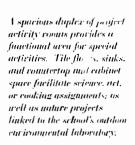
HORIZON ELEMENTARY SCHOOL; GRANGER, INDIANA

"I feel that a school should be like your home," says Jayson Balsley, a third-grade teacher at Horizon. "The kids are here seven hours a day. The teachers are here at least eight hours a day. It should be a living environment. Our school is inviting and comfortable. The lighting, colors, and temperature in each classroom are very important."

"Our youngsters' basic needs are being met here," adds Principal lim Hendress. "You've got to deal with basic needs. We have a chance to teach school every day in a comfortable environment. Our kids don't fight here, It really helps with the temperament of the students and the teachers this building is calming in a sense. The building allows things to happen—it takes down barriers.



Monitors mounted in each classroom facilitate multimedia instruction without consuming a lot of floor space.





"If kids think that school is a wonderful place to go, that removes the biggest barrier of all. After all, this is school." But you should see these kids coming in at 8:40 in the morning—they're excited, talking, laughing, and in the afternoon, they don't want to leave."

Large groups often use the centrally located large-group instruction area, which features carpeted risers and variable lighting for video projection.

ROSE TOWNSHIP, MICHIGAN

ROSE PIONEER ELEMENTARY SCHOOL:

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COMMUNICATIONS AND TECHNOLOGY

"WE ARE MOVING INTO
AN FRA WHERE MOST
PEOPLE WILL BE WORKING WITH THEIR MINDS
FAR MORE THAN THEIR
HANDS, AND MANY OF
THEM WILL BE WORKING IN BUSINESSES
AND INDUSTRIES THAT
HAVE NOT EVEN BEEN
INVENTED YET."

—President Clinton. Blue Ribbon Schools Awards Ceremony, May 29, 1996 What part of your school helps you learn the most?

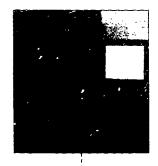
"The library and my classroom...I LIKE THE COMPUTERS BECAUSE THEY ARE EASY...THE BOOKS IN THE LIBRARY...videos and having the monitors in the classrooms...the computer lab is the best part because the way kids are growing up today, kids need computers...math games on computers but I would have a 32-foottall TV in the lunch room so we could do the math games there and watch videos...I THINK THERE SHOULD ALWAYS BE LOTS OF BOOKS BECAUSE ALL KIDS IN SCHOOLS LIKE TO READ."

- Frank Home he Frank Carates How Historia Paris School Spice of Instrume

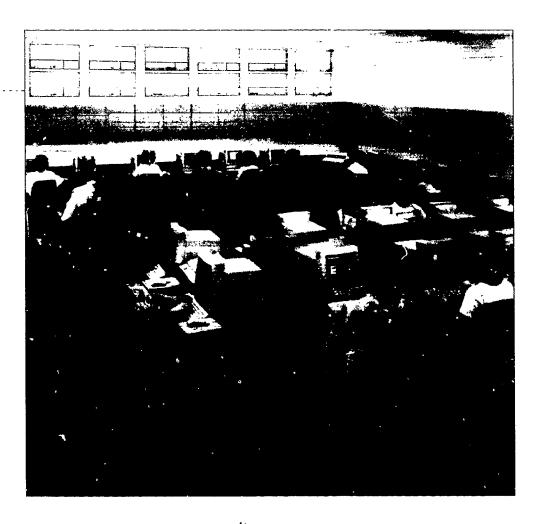
In tiples Mr. Library Some Com. Com. Front line was selected.



COMMUNICATIONS AND TECHNOLOGY



"Nothing—nothing—is as important as preparing the American people and our young people for the 21st century world in which they will live," stated President Clinton in a May 1996 press conference addressing the future of America's schools. Championing the technology initiative in public education, Clinton called for a \$2 billion, five-year Technology Literacy Challenge to ensure that every student has access to computers and other forms of technology, as well as the training needed to harness that technology in daily learning.



A computer kiosk at Prairie Vista Elementary School in Harris Township, Indiana Jabore', is a popular stop with young students. The computer lab at McNab Elementary School in Pampano Beach, Horida wight, is housed in a well-lighted room with access ta clean power.

The national mission to improve technological literacy in our schoolchildren encompasses four basic objectives:

- 1) PROVIDE ALL TEACHERS TRAINING AND SUPPORT TO HELP STUDENTS LEARN THROUGH COMPUTERS AND THE INFORMATION SUPERHIGHWAY;
- 2) DEVELOP EFFECTIVE AND ENGAGING SOFTWARE AND ON-LINE LEARNING RESOURCES AS AN INTEGRAL PART OF THE SCHOOL CURRICULUM:
- 3) PROVIDE ACCESS TO MODERN COMPUTERS FOR ALL TEACHERS AND STUDENTS; AND
- 4) CONNECT EVERY SCHOOL AND CLASSROOM IN AMERICA TO THE INFORMATION SUPERHIGHWAY.

In response, a consortium of leading organizations, including the National Education Association, the American Federation of Teachers, the Parent Teachers Association, and the National School Boards Association, has endorsed the national initiative to help train and prepare teachers for the challenge ahead. Known as 21st Century Teachers, the consortium will help ensure that "America's teachers are as comfortable with computers as they are with chalkboards," according to Clinton. "Teachers will have new and exciting ways to teach traditional subjects. They'll be able to exchange lesson plans with other teachers, communicate more frequently with parents, help students unfamiliar with computers, and keep up with students who already are."

If teachers don't bodin to use technology in their classrooms, they will be living in an artificial world," says Dr. David O. Dickson, superintendent of the School City of Hammond in Indiana. "Teachers will be out of touch with their students. The time-honored textbook still has a front-row seat, but it is sharing that seat with technology. Technology today is not just a resource—it's mandated survival equipment. You just can't compete without it."

Modernization and expansion of McNab Elementary School methoded construction of a new media center. The center tentures a large processing area and work room for the media specialists.



COMMUNICATIONS AND TECHNOLOGY

The well-equipped computer lub at New Britton Elementary School near Fishers, Indiana, 'background) allows an entire class to take computer-based instruction simultaneously, there, students are using a popular math software program. Multimedia instruction encompasses audio, video, still photography, animation, text, and graphics, allowing children to see, hear, and interact during the instructional process. Computer-based learning tools include instructional games, research databases, electronic encyclopedias, multimedia libraries, simulations, and interactive lectures and discussion groups. The technology allows for self-instruction or one-on-one tutoring; working in small groups; and communicating and collaborating throughout a school, a school district, a community, and even internationally. Distance learning through interactive television services or on-line lectures er bies students to access expert instruction, including college and university programs, from a remote location.

The computer lab at Anna Flementary School, in Anna, Ohio, is accessible not only to students but to community members as well. Grandparents are invited in for lessous from their young a matchildren.

As technology and advanced communications take center stage in contemporary education, teachers and administrators find that the benefits lie not only in their students unquenchable appetites for high-tech, multimedia instruction—but in the powerful results. New York City's Computer Pilot Program, focusing on remedial and low-achieving students, netted improvements of 80 percent for reading and 90 percent for math when computers were used as part of the instruction program. A 1995 study of more than 130 academic programs found that using technology to support instruction improved student outcomes in language arts, math, social studies, and science.



During another recent study, mandated by Congress, multimedia instruction compared favorably to conventional approaches to instruction: the study documented time savings of 30 percent, improved achievement, cost savings of 30 to 40 percent, and a direct positive link between the amount of interactivity provided and instructional effectiveness. Computer-based instruction was also found to be the least expensive instructional approach for raising mathematics scores by a given amount, according to another study. Approaches that were proven to be more expensive included peer tutoring, adult tutoring, reducing class size, and increasing the length of the school day.

Cornero H. M. Megani, J. Schooner, and Swam. Summer 1990. Cloning in on the Target. Who Among The Folice non-rits Disadvantaged Benefits Most From What CBP. *Journal of Research on Computing in Education*, pp. 331-493. Bario Dien R. and Liv Sixin Kachla. 1995. *Pheetisein von Leeronage in Schools.* 1990-1994. Washington D.C., Software Petils bers, V. accurring.

Many educators also cite technology as a vital tool in working with children with special needs. A study on the use of technology for children with disabilities showed that "almost three-quarters of school-age children were able to remain in a classroom, and 45 percent were able to reduce school-related services" when computer-assisted learning techniques were employed. "Technology really captures students," says Dickson. "We find it extremely useful in working with children with attention-deficit disorders and other special needs. We also have 32 different languages spoken in our district; today's software helps them to learn English at a rapid pace."

A classroom at Three Creeks
Elementary School in
Lowell, Indiana, is set up
as a computer lab, with workstations positioned around the
perimeter of the room.

"If I were to give one piece of advice to administrators involved in constructing a new school. I'd say 'Build it for the future,'" says DeWayne Akin, principal of Woodbrook Elementary School in Carmel, Indiana. Following an extensive modernization, Woodbrook now stands ready to accommodate the school's technology "wish list." "We have the ability to begin using fiber optic cabling," says Akin. "We want to have a mini-lab in each classroom—networked computer labs at every grade level. The building modernization plan and the technology plan need to be coordinated from the start."

In spite of the overwhelming advantages that technology offers to the learning process, many schools are still unable to tap into the benefits of the information age—lacking the facilities and the infrastructure to accommodate computer-based instruction. "Unfortunately, schools have not kept pace with this information revolution," notes a special report of the National School Boards Association. "While the military, business, medicine, and science have undergone a technological metamorphosis, most of education is still mired in 19th-century curriculum and instruction patterns...In short, few school buildings are 'wired' and few educators are 'plugged in' to the Information Age."



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^{1.5} Department of Commerce, National Telecommunications and Information Administration. June 1995

COMMUNICATIONS AND TECHNOLOGY

THE OLD SCHOOL:

"Last year, we only had two CD-ROMs. And all the printers got jammed because too many people were trying to use them."

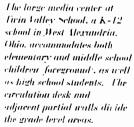
THE NEW SCHOOL:

"Now all the computers have CD-ROMs, and there's a printer for every two people... They're trying to hook it up so our class can talk to a class in Germany. That's really neat."

Clark Lacy and Jacqueline Jacobus, Fourth-Graders, Alum Creek Flementary School; Lewis Center, Ohio Incredibly, many educators still struggle with a lack of electrical outlets to support class-room activities, including the use of computers and VCRs. "It sounds like such a simple thing," says Kathy Nelson, a first-grade teacher at Maywood Elementary School in Hammond, Indiana. "After all, electricity has been around for a long time. But we just didn't have access to it in our old school. Most rooms there started with one outlet—that's not an exaggeration. It dictated how we taught, because we'd have to say. 'We can have the listening center today, or the overhead projector today, or maybe we can use the record player today.' It dictated how you set up your room and what you could do at certain times. And we certainly couldn't have computers."

In addition to outlets and access to electric power, the infrastructure "basics" necessary to meet typical technology and communications requirements in schools include good lighting, flexible furniture, adequate cabling, cable trays, phone lines, a climate control system, security, and storage. Once the infrastructure and hardware/software are operational, where does technology-based instruction take place? Just about anywhere. Today, many new and modernized schools feature fully equipped computer labs, allowing instruction for a large number of students at once, as well as staff development and community seminars. Other schools opt for smaller, classroom-based computer centers, typically supplemented by additional workstations in media centers.

Flexible computer carts also enable teachers to set up portable labs, moving computer workstations to small-group instruction areas, offices, and conference rooms. Children and parents can link up to school networks from home or other remote locations, connecting to classroom assignments, the media center, or school web site; as well as other schools, public libraries, museums, colleges and universities, and sites around the world. School systems are also turning their attention to other aspects of modern communications, finding that more accessible telephone and electronic communication has become vital to a productive workday. New schools frequently feature telephones in





The media center at South Ripley Hementary School in Jersuilles, ladiana, teatures a small story pit, a turorde with primary school students.

COMMUNICATIONS AND TECHNOLOGY

THE OLD SCHOOL:

"Our former facility had a media center on wheels. We set up a cart in the gym/multipurpose room."

The New School:

"Our media center is set up for modern technology. We want to encourage handson activities, and use of our LAN flocal area network] and the Internet. We're linked to our community library. The kids have a completely different attitude about going to the library—it's a place where access to technology can happen."

Paul L. Erston Superintendent Twin Valley Community Local School District, West Alexandria, Ohio every classroom, enabling teachers to confer easily with parents and school administrators, and to set up "homework hotlines." Schools find that e-mail also improves parentteacher dialogue, and facilitates interaction and collaboration with other teachers.

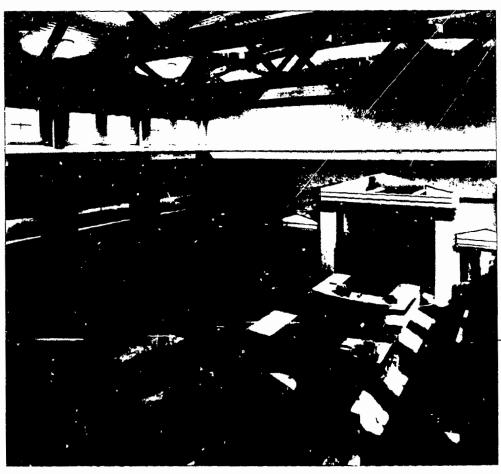
"I don't know how we did without e-mail." says Pattie Sherman, a rourth-grade teacher at Suncrest Elementary School in Frankfort, Indiana. She and Chris Guffy, the school's media specialist, cite numerous benefits, including automated access to Suncrest's media center. "Right now we're studying deserts." says Sherman. "We can access the resources of our library from our classrooms." "Our circulation has increased amazingly." adds Guffy. "We're finding books that we didn't realize were there." The two also point to greater efficiency and saving on instructional time as benefits of being networked throughout the school. Less time is needed for staff meetings and the faculty is constantly discovering more expedient means of sending out or receiving information. such as transmitting the daily lunch count for each class to the cafeteria via e-mail.

Telephones within classrooms have greatly fostered parent-teacher communications in many schools. "If a teacher needs to talk with a child's family about a student—perhaps about a special need or concern—he or she can call at any point during the day while the students are working," says Superintendent Dickson of Hammond. "But the teacher might not be able to make that call if it means a long walk to the office." Janet Grove, a fifth-grade teacher at Maywood Elementary School in Hammond, agrees: "In our old school, my room was upstairs, and it seemed as if I had to walk half a mile to get to the phone. And then when I got there to make a call, someone would already be using it, or the line would be busy. Phones in the classrooms make us much more efficient, and they help us to develop better relationships with our students' families. It also helps with discipline—now we can say to a child, "Do we need to call home?"

"Isn't it odd that today—given how long telephones have been around i some people are still wondering why they're necessary in the classroom?" says Dickson. "It's reinforcing

that old idea that the teacher's sole job is to stand up in front of the classroom and talk all day long. Communication is so important today, especially when many children have different problems and needs. We need to do everything we can to share ideas and information. In the past, if our teachers were ill-equipped, they felt like second-class citizens. Now, with access to telephones and electronic communications, they are revitalized—they feel that they're professionals, and part of an important national and international profession."

A large, open media center at Cherry Tree Elementary School in Cormel, Indiana, reflects the school's emphasis on reading and accessing information. The ample space and support areas, including an adjacent iarge-group instruction center, facilitate class scheduling.

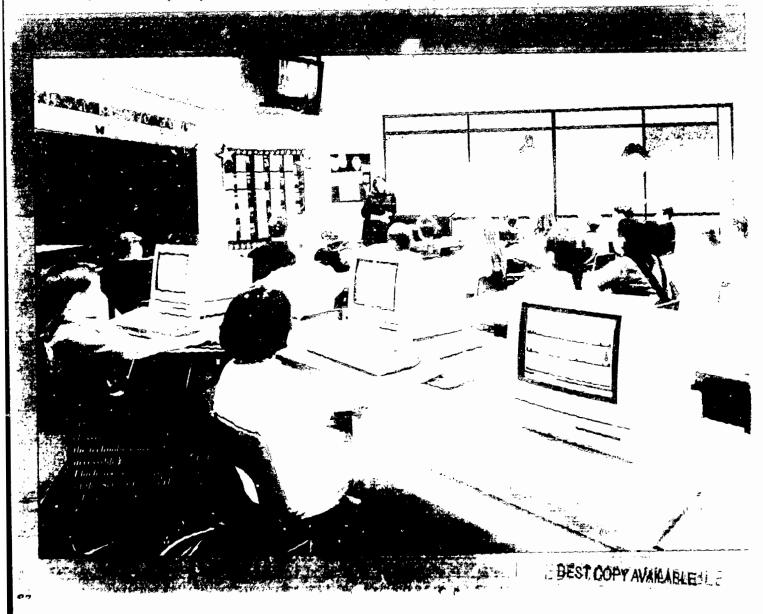


MAYWOOD, MORTON, AND EDISON ELEMENTARY SCHOOLS; HAMMOND, INDIANA

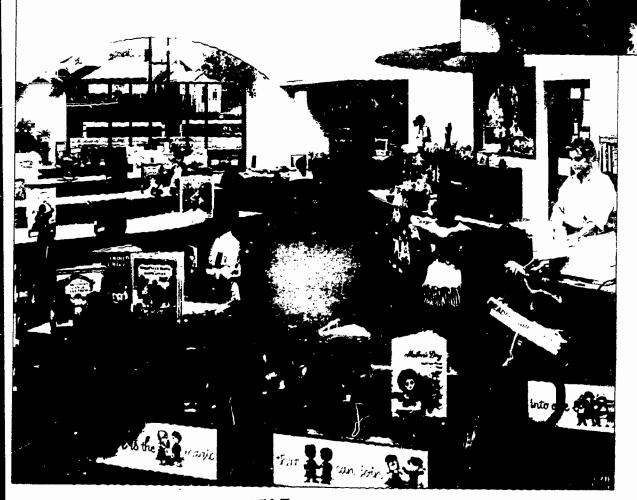
"I come to school at 6:30 in the morning and the phones are ringing," says Stanley Griffin, principal of Maywood Elementary School. One of three new elementary schools in the School City of Hammond, Indiana, Maywood is among many schools

that have found that advanced communications technology, including voice mail and e-mail, has greatly improved outreach to parents and the community.

"Parent communication with the teacher is much better," says Diane Denton, the school's office manager. "Parents and students can call in and listen to the Homework Hotline to find out about homework and special activities. Or we can dial out to the homes about a special event. Parents can also easily reach a teacher or leave a voice mail message."



The media center at Maywood Elementary School offers video programming, a number of computer workstations and research terminals, and a recessed reading pit. "Students can access so much more information today than I ever could as a child-getting on a bus and spending all day in the public library," says Dr. David O. Dickson, superintendent.



MAYWOOD, MORTON, AND EDISON ELEMENTARY SCHOOLS; MAMMOND, INDIANA

The three schools were designed with technology and flexibility in mind. Classrooms feature flexible walls and furniture arrangements that allow for learning centers, including computer-instruction areas. Convenient and accessible Hoor boxes provide all the necessary power and telephone connections.

Computers are located in every classroom as well as in the media centers. Video broadcasting, distance learning, and computer access to the media center and remote sites are all in a day's work.

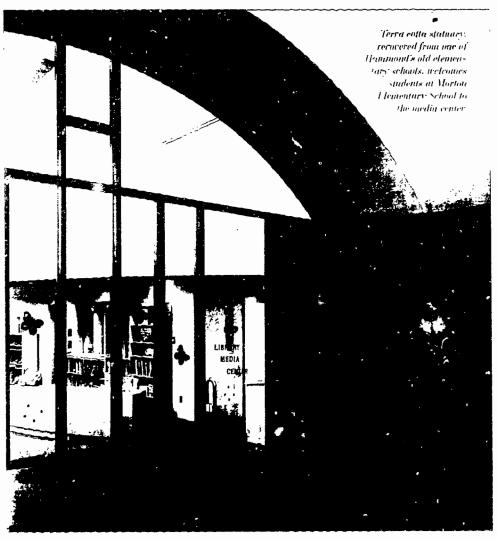
Each of the three schools is arranged in pods with operable walls between classrooms

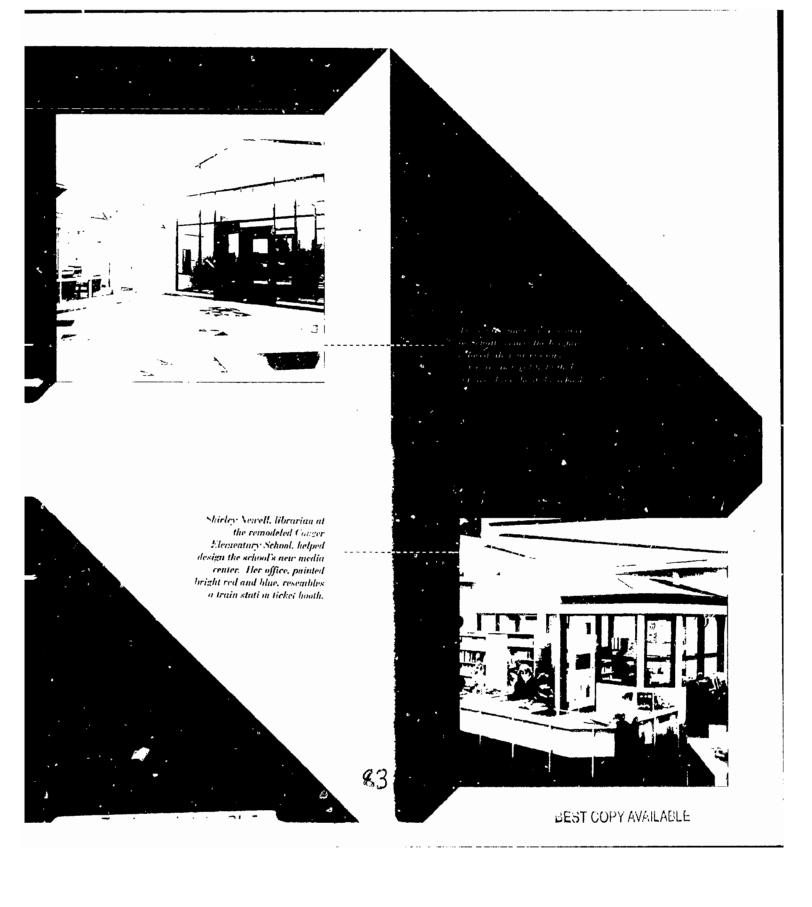
and extended learning centers at the heart of each pod: Each "duplex" of classrooms shares a glassed-in office or conference area, which can be used for independent instruction, tutoring, and parent conferences. Storage rooms are allowed within each pod. "Like the convent ace of each pod."

Studen at Edison Elementary
School for the part and near
A forton, a
per y of search
functions on the project beated
in the mool's media center.
Students also enjoy instructional
computer games and videos. The
comfortable, well-lighted space is
located centrally within the school.



Operable walls allow teachers t team up on instructional program and special activities. Hour boxe throughout the classrooms provid vasily accessible power for computer: networking, and phone lines fo modems. The two classrooms shur a small conference area in the bact ased for tutoring and meetings. "I se fewer kids coming to the penterpal office for discipline reasons," say Principal Stanley Griffin, "Th affice serves more as a pleasar place where individuals, sma groups, and classes rome and inter act positively. The conference room between classrooms are used for anall-group instruction and pur ent conferences. The window ensure that students are being supervisi intermited at theme. It is gree for elastica management





ROBERT F. SCHULTZ/CONGER ELEMENTARY SCHOOLS; DELAWARE, OHIO

Teachers at the new Robert F. Schultz Elementary School in Delaware. Ohio, have seen a significant increase in access to technology since the school opened in 1995. Telephones are located in each classroom, computers are networked, and the school features a sophisticated intercom system. "Answering the telephones is a job for students in my classroom." says Angie Hillier, a fourth-grade teacher. "We teach them how to answer the phone

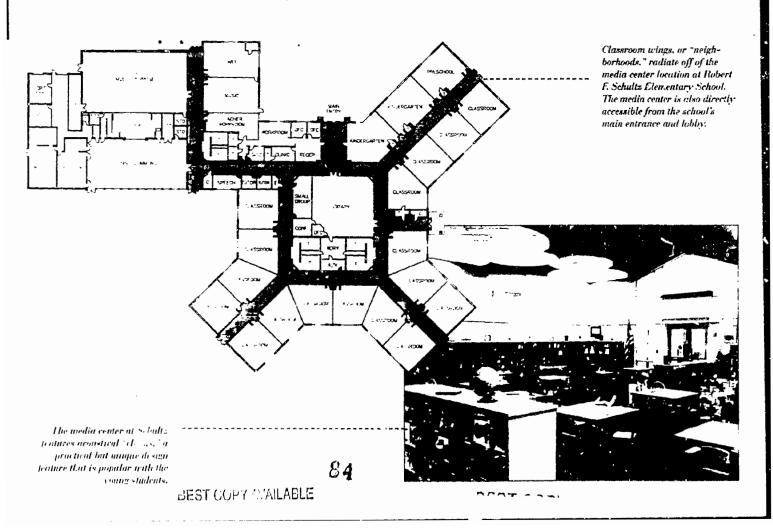
appropriately and to take messages."

Telephones are viewed as a timesaver at Schultz, and also enable teachers in different academic wings to communicate easily with one another. Teachers at Schultz and nearby Conger Elementary are also strong advocates of the large workrooms available in each of the schools. "The work areas make us so much more efficient," says Reg Main, a reading instructor at Conger. "We have access to

materials, and it's a good place for interaction with other teachers."

Not to be outdone by the construction of Schultz. Conger Elementary School simultaneously underwent a major renovation and construction of an addition. Much of the original building, constructed in 1913, was razed; and a new wing houses classrooms, offices, a gymnasium, the media center, and a cafeteria. The "new" Conger is an "A-plus," says fifth-grader Seth Blair.

Riegenhoff, fill "Remodeled School Gets Rave Reviews," Delaware Dispatch.





The high point is the service of Scholle points of the service of

Shirley Newell, librarian at the vemodeled Conger I lemer tary School, helped design the school's new media center. Her office, painted bright red and blue, resembles a train station ticket booth.

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ENRICHMENT AND SUPPORT SPACE

"OUR MISSION IS TO ENRICH THE LIVES OF OUR STUDENTS."

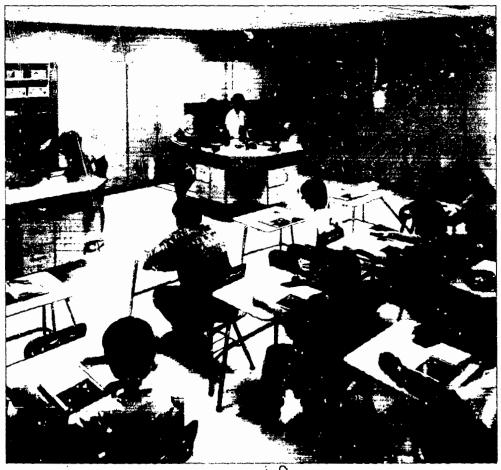
—Dr. Jayne Hartman. Principal, 8t. Lucie 1 lementary School, I lovida WHAT DO YOU LIKE ABOUT YOUR NEW SCHOOL? "We have an art room now ... WE DON'T HAVE TO BRING OUR OWN STUFF FOR ART ANYMORE...now we have a kiln, more paper. BIGGER ERASERS, BOTTLES OF GLUE, lefthanded scissors...we can make leaf prints: AND USE THE PASTELS...AND WE HAVE A MUSIC ROOM...we can go around the room in circles... the teacher can use the pigno ... MY FAVORITE PART IS LEARNING HOW TO SING."



ENRICHMENT AND SUPPORT SPACE

While school systems across the country strive to keep pace with current technology trends, other broad-reaching demands provide yet another set of challenges: addressing multi-cultural issues and needs, opening schools to community members of all ages, and offering an expanded array of educational and social services to students. Schools that lack specific facilities for many of these activities—ranging from food service to independent counseling—finc. Tieir program efforts inhibited, even in meeting fundamental curriculum requirements.

The science inh at South Aipley I beneatary School in Versailles, Indiana, combines traditional classroom seating with flexible "island" tables that provide work surfaces large enough to accommodate several students at once. The tables also feature sinks, electrical outlets, and drawers and cabinets underneath.



According to a 1995 report of the U.S. General Accounting Office, millions of students attend schools that have indicated a lack of facilities to carry out essential instructional and support activities, such as laboratory science, small- and large-group instruction, counseling and testing, teacher planning, social and health care services, and before- and after-school care. More than 40 percent of the schools surveyed reported, for example, that they lacked the facilities to meet the functional requirements of laboratory science.

Timed States General Accounting Other School Litelaties, America's Schools Vot Designed on Equipped to 21st General April 1995



Small-group instruction areas, such as these rooms at Lila Canaran Elementary School in Medina, Ohio, have become a vitally needed resource in clementary school education. This flexible space enables teachers, tutors, and volunteers to work with small groups ar single students on remedial reading instruction, testing, and other focused activities.

ENRICHMENT AND SUPPORT SPACE

THE OLD SCHOOL:

"We used to lose the gym for as much as a day for assemblies, because the stage was in the gym. We'd have to take the P.E. classes and crowd into a classroom and watch a video."

THE NEW SCHOOL:

"Including a doublesided stage was one of the best things we did. Now, school assemblies and other programs during the day never affect the P.E. program, because the cafeteria can be used for the assemblies."

-Steve Bilikam, Physical Education Teacher, Wyandot Hun Elementary School; Powell, Ohio "All I need is a room," stated Terry Karoul, a home economics teacher for elementary school students in Atlantic City, New Jersey, when interviewed in 1996 about her educational and facility requirements within a planned new school. While many of the teachers in the Atlantic City Public Schools offered a healthy assortment of suggestions on the "wish lists" for their new classrooms, Karoul simply pointed out that, at present, she had no classroom for her program—not even a room she could share with another instructor. Instead, she was forced to teach home economics on a small, poorly lighted auditorium stage.

Karout's situration is not unusual in many older facilities. Eliminating "art on a cart" and the need to drag music equipment from room to room: providing space for science. home economics, and industrial technology: and offering appropriate areas for guidance, tutoring, special education, and clinical care are among the many pressing reasons for modernizing or replacing older schools. "Our mission is to enrich the lives of our students." says Dr. Jayne Hartman, principal at St. Lucie Elementary School in Fort



Pierce, Florida. "The facility certainly makes a difference. To get the children into artistic thinking or scientific thinking, they should go to those types of places—where they can be creative and messier if they need to be. They can sit on stools at big tables and feel like real artists. The furnishings and finishes are better suited to these activities. Trying to use regular classrooms for art and music programs really limits what we're trying to do."

Pat Hester, a guidance counselor, appreciates the amount of space her area was given in the new Taylor Road Elementary School in Reynoldsburg, Ohio. Her office adjoins a small conference room; operable walls in between enable her to open the space into one large room if needed. "We do a lot of conferencing, and bring in a number of parents and small groups of children. Here, our guidance area is as large as the principal's office, but that shouldn't be unusual in schools, given the types of activities that counselors need to 40."

"Before the renovations here, our school couldn't begin to compare to what we have now." says Principal DeWayne Akin of Woodbrook Elementary School in Carmel, Indiana, where program requirements necessitated a modernization of the 25-year-old school. "The gym is larger, and the kids are able to do so much more during P.E. The art room is larger, and has a dark room and a room for the kiln. Our music suite is soundproof, with a built-in stereo system. The kids can do all kinds of productions. Even the office has changed—before, it was small and cramped; now our administration has much more space. The kids have benefited; the teachers are more motivated; and the community is much more involved than before."

THE OLD SCHOOL:

"Kids didn't eat as much in our old school. I'd see many of them bypassing the cafeteria day after day after day. because it was crowded, they couldn't get through the line in time, and they couldn't get the food they wanted."

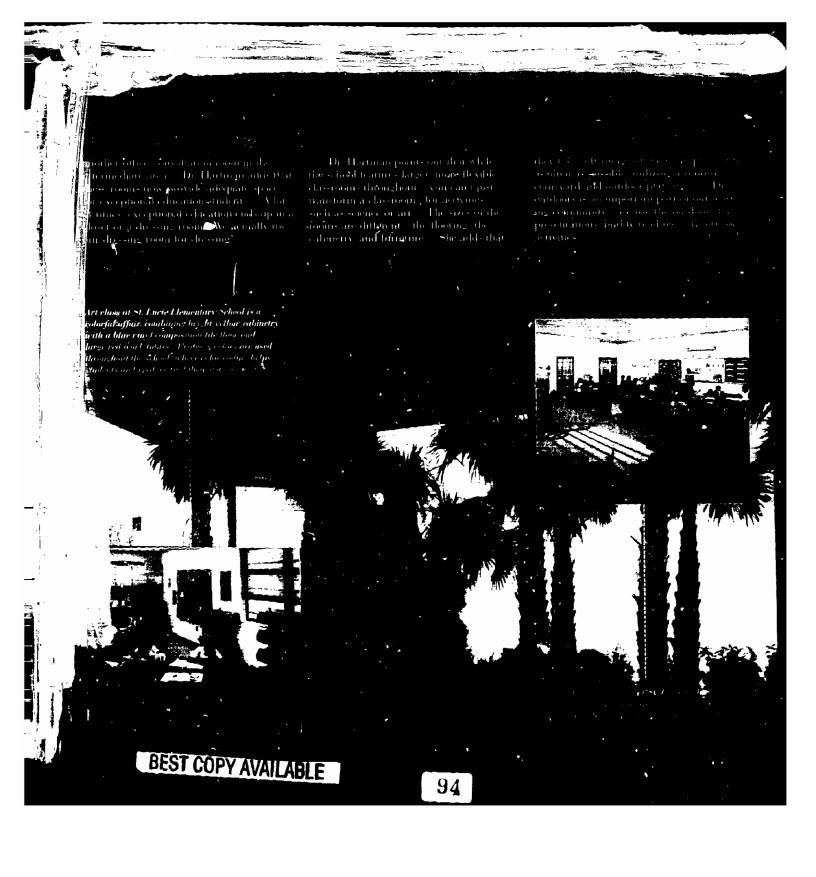
THE NEW SCHOOL:

"Our new kitchen has had a big impact. Kids are eating more, and coming back to classes better nourished. There's more space, and more menuchoices. They want to eat in a pleasant environment."

-Roseann Williams. LD Teacher. Twin Valley School: West Alexandria, Ohio

The Hexiste enjetorum 6. North Harry on Clementary School in Humsey, Indiana, has become a popular site for both school and community programs.





MCNAB AND NORCREST ELEMENTARY SCHOOLS; POMPANO BEACH, FLORIDA

Master plans developed for McNab and Norcrest Elementary Schools in Pompano Beach, Florida, call for phased construction that will ultimately replace both schools. Phase I construction, planned carefully to avoid disruption to existing facilities, included development of an expandable media center, a computer lab, a science lab.

exceptional education space, art and music rooms, and classrooms in each school.

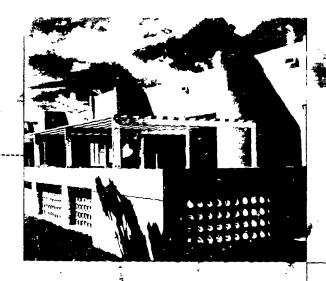
"The classrooms were very small and there was little flexibility." says Drew Lippman, manager of facilities projects for the School Board of Broward County. "We also had no science lab, a

very small media center, and

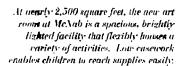
no art or music rooms—art and music were either 'on a cart' or held in a regular classroom. The new additions give us added cap—ity and an ability to handle many more activities. The media center was desperately needed, and is about triple the size of the old one.

A gradual replacement of McNab I lementary School, originally built in the late 1950s, began with a 28,600-square-foot addition that added a new media center, art and music rooms, science and computer tabs, and special education and regular clussrooms.

A terrace adjacent to the art room at McNab enables students to set up ewels und other creative activities wildows. The terrace features a maintenance-free aluminum trellis, which provides shielding from the man.



A well-equipped leacher workroom at McVub offices space for instructional preparation and access to equipment and supplies.

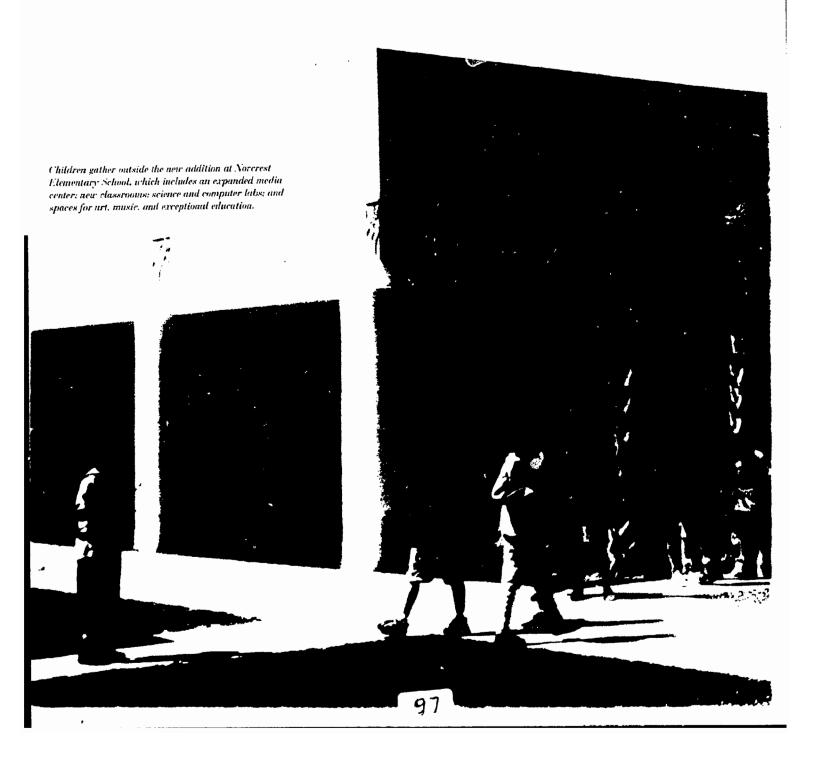


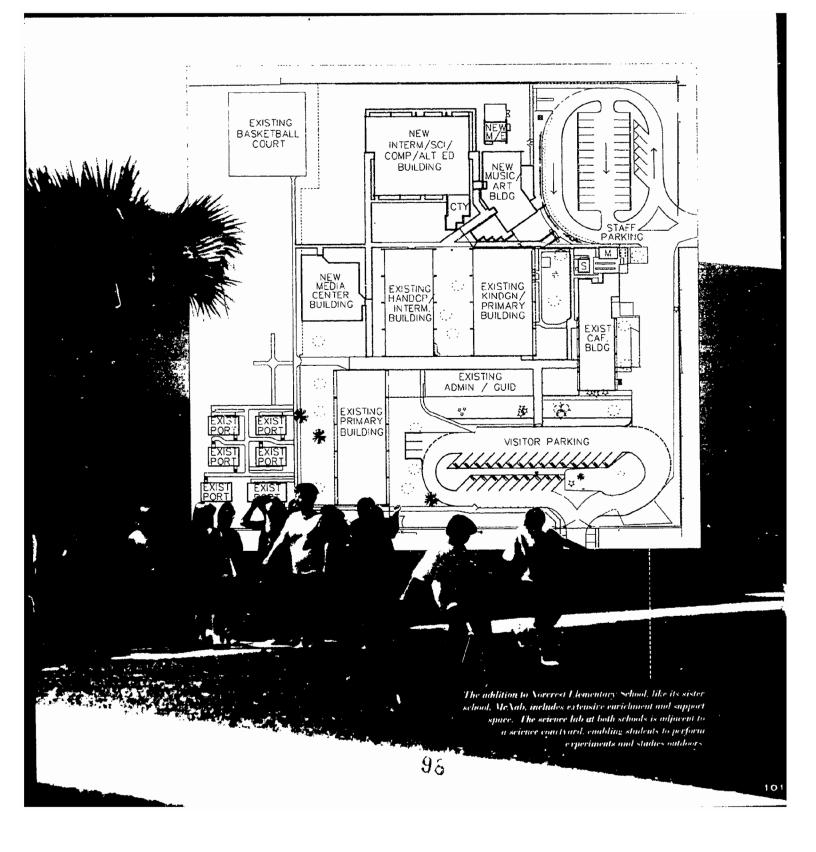


The science lab at McNab lins aculresistant countertops and glass fronts in the apper cabinetry for display of equipment and materials. The risan also features a movable science demonstration desk.



MCNAB AND NORCREST ELEMENTARY SCHOOLS; POMPANO BEACH, FLORIDA





ENR CHMENT AND SUPPORT SPACE

Many contemporary art rooms, such as this facility at Palm Beach Gardens Elementary School in Palm Bearh Gardens, Florida, feature tile floors, extensive display areas, and separate spaces for kilns and additional storage.

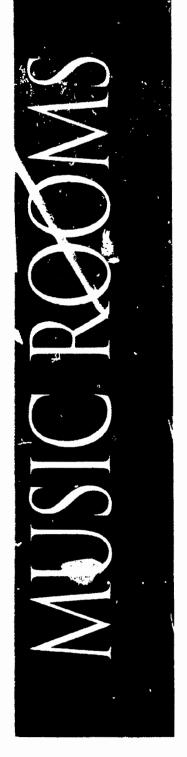


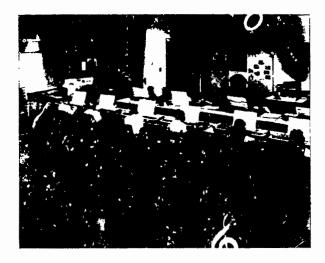


"I don't do very many 'neat' things," says Jenny Moon, art teacher at Woodbrook Llementary School in Curmel. Indiana. The exten sinks in our new art room have made my life a lot easier." After an expansive renoration at Woodbrook, the new art room has hirge work tables and extensive built-in cabinetry and shelving. Our old room had the kiln right in the room. ichich wasn't safe," Moon also points out. The new space fea-tures an adjacent room for the kiln, as well as a dark room.



ENRICHMENT AND SUPPORT SPACE





Long tables facilitate keyboard instruction at Maya ood Elementery School in Hammond, ladeana Asial, with a deinking tountain bubbler in the classroom allows children to clean then instruments and get a dend, at water in thout learning the classroom

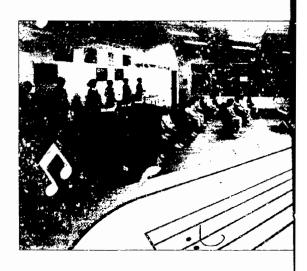
A rarie's of storage options allows the music teacher at Woodbrook I lementary 8 had easy necess to instruments, choral folders, decorations, and class materials. A long rack provides space for costumes, while large flat files sufely hold posters and banners. Shelves for propseoncenically store an assurtment of items ranging from reindeer antlers, ribbons, and garlonds to flags, lets, and kuzoos.



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Unt pile ocrpet insets featuring a musical staff add both visual interest and practicality to music voims. At South Ripley I lementary School in Versailles, Indiana, the inset is used to denoveries space for flexible seating on the floor.



A music instructor at Horizon I lementary School in Granger, hadiana, takes advantage of a sloped wall surface designed to facilitate use of overhead projectors. A portion of the room is set up as a keyboard lab.



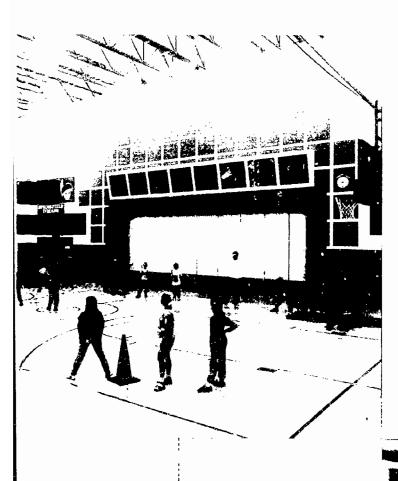
Most music rooms, such as this one at Three Creeks I lementary School in Lowell, Indiana, feature either built-in or portable risers.

10%

ENRICHMENT AND SUP

MINASIUMS

The gymnasiums at Springfield Evenentary School in Michigan City, Indiana, and Edisan Elementary School in Jammond, Indiana, each share a two-sided stage with the school cafeterias. Performances that host larger andiences are accommodated in the gyms; wood floors are protected with a floor cover.



Safe, successful gymnasiams require high clearance, acoustical treatment, and structural columns that are integrated into perimeter a alls—as opposed to freestunding columns that may be hazardons to clubdren Building vodes require that assembly areas such as gyms have doors that open out toward covidors; although they should not interfere with the flow of circulation. Water fountains are best bound in a recessed entry alcore, aray from gym activities. The gymnusium at New Brittan I lementary School near Lishers, Indiana, features a durable carpet surface with volurful markings for volles bull and buskethall.

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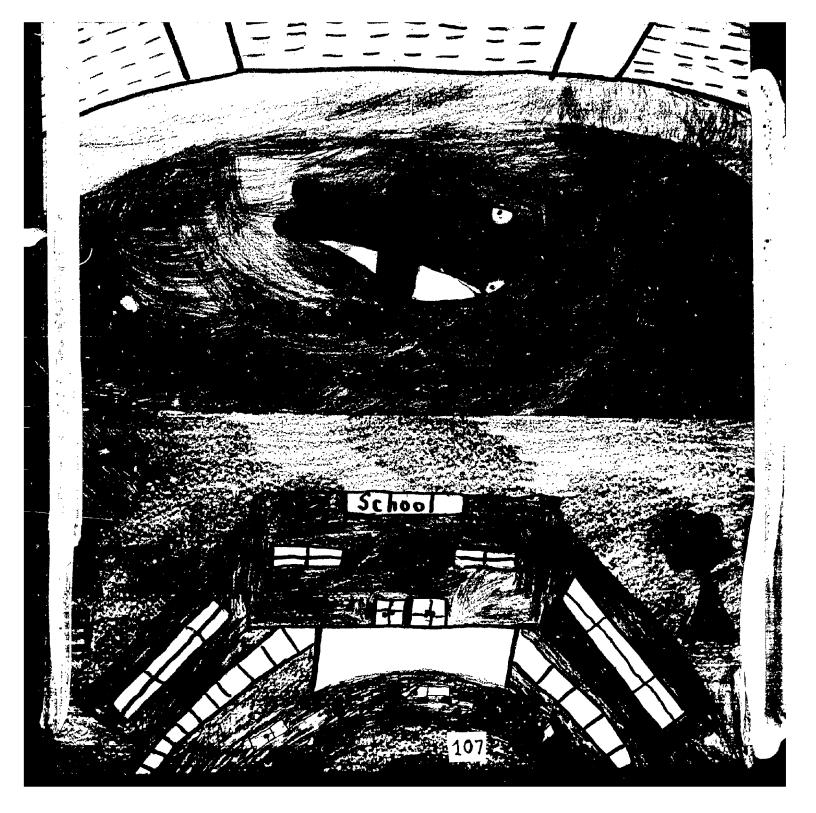
OUTDOOR LEARNING AND PLAY

"WE HAVE TO KEEP IN MIND THAT THESE ARE CHILDREN AND CHILDREN NEED TO PLAY. THEY NEED FRESH AIR AND EXERCISE."

—Lynn Black, Director of School Improvement, Metropolitan School District of Pike Township, Indiana "If I could design a selool. I would have a pool on the playeround with a 100-foot slide. A WOODEN FORT WHERE WE COULD WATCHIEV. AND EAT CHIPS, a place for us to ride snowmobiles, a race track with race cars to take you around the school, a room for water balloon fights, a place for airplane rides at recess. A FOOTBALL STADIUM, a soccer field, a tank for whales so that we can learn about them and train them. A Lake so you can ride Jet skis, AN INDOOR POOL WITH RAFTS TO READ BOOKS IN... everything would be made out of candy instead of wood and stuff."

M. P. Brancia, Some Control of the S. P. S

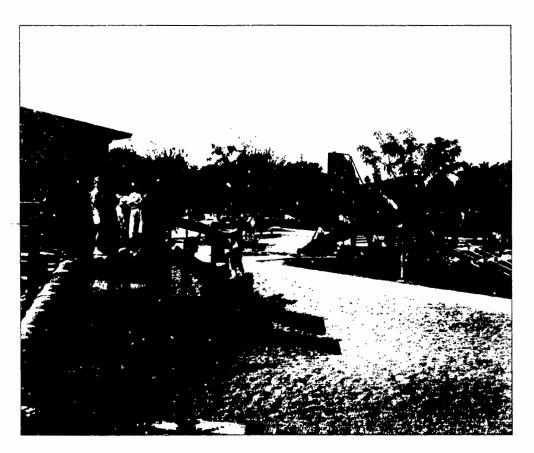
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OUTDOOR LEARNING AND PLAY

"One of the things I like best about our school is that the students are able to go outdoors frequently—the outdoors is part of our learning community." says Dr. Jayne Hartman, principal of St. Lucie Elementary School in , ort Pierce, Florida, "We were able to keep many of the existing trees on this site when the school was built, so it seems as if it is an older, landscaped campus. We have two play areas and an open courtyard. The children also go outdoors as they move from building to building. I'm out there a lot as I walk the campus, and I know what it does for my attitude. It helps to clear your head and calm you down. Classes that are held outdoors are freer and less restricted."

Children at I hn Hond I dementary School in Oscoola, Imliana, enjoy a variety of modular play structures, Nearby, a popular sledding hill was preserted on the site during the school's expansion and modernization.



Although the students at St. Lucie Elementary School are fortunate to attend school in an area that boasts a warm and sunny climate year-round c"there have only been two afternoons all year that we haven't been able to go outdoors," says Dr. Hartman), the apportance of outdoor learning and play is a fundamentally accepted concept in schools throughout the country. Most schools offer students outdoor activities through recreational sports; playgrounds; and an assortment of learning environments such as amphitheaters, laboratories, courtyards, nature centers, and fitness areas. Outdoor environmental laboratories in particular are on the rise as school systems seek to take advantage of their sites by incorporating areas for children to participate in hands-on science and nature activities, such as gardening, raising insects and butterflies.

Children at Mayreou I lementury School n Hammond, Indiana, often enjoy instruction in the outdoor amphitheater, set within the school's landscaped grounds



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OUTDOOR LEARNING AND PLAY



Modular structures, such as the multi-component play structure at Bates (the Primary School in Bates) (the Indiana, ofter children a rayety of clumbing swinging, studing and balancing experiences.

"My favorite part of school is going outdoors to the environmental lab," says Krista Parker, a third-grader at Horizon Elementary School in Granger, Indiana. "The best part is watching the fish and the turtles, and learning how water animals live. When we have class our there we get fresh air and that's the best part of the day. Clearly a favorite with Horizon students, the environmental laboratory is a source of pride for teachers and administrators as well: "It's wonderful," says second-grade teacher Martha Bartels. "The students love the turtles and the frogs—they're very concerned about them and how they live and survive. It's a living lab—in the spring we plant seeds and the kids can see things grow." Designed with extensive community input, the lab is in constant use, not only for science classes but for art and music as well. "Classes are constantly using the outdoor amphitheater," says Principal Jim Hendress. "When the parents visit, the kids do plays for them outside. It's one of the things we dreamed about as we planned this school, and still we didn't envision how much it would actually be used."

The arms, both Prairie Vista Elementary School and Elm Road Elementary School also teature outdoor learning environments. The courtyard at Elm Road also teatures an impritheater regularly used for classes, storytelling, or quiet reading activities. "We ove our courtyard." Says Bea O'Dell, a teaching assistant. "The kids have really enloyed raising herb gardens out there. They plant the herbs and later they dry them. It is a great opportunity to be able to use the outdoors."

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Many students at Maywood I Tementary School have undertaken a five-day truming course in mediation. Students work on the playgrounds in shifts to help diffuse confrontations and caracture non-physical resolution of conflicts. The school features two playgrounds, separating younger and older students At St. Lucie Elementary School, the grassy, open courtyard, which lies at the heart of the seven-building campus, is used for reading and social gathering, outdoor games, and a variety of community-based events such as the annual story book character day parade and the school's fall festival and spring fling. "All of the activities for the fall festival were held out in the courtyard." says Dr. Hartman. "We had arts and crafts, a moonwalk. game booths—everything worked very well." Dr. Hartman also points out that the school's intercom system contributes to outdoor activities: "We play music whenever the children are coming in and going out for their classes. In January, in celebration of Mozart's birthday, we played Mozart for them every morning and afternoon."





As the centerpiece of a primary school playground, modular play structures facilitate a compact play ground design and make superrision easier. Children shown here are enjoying the playground at Joan Martin Llementary School in Hobart, Indiana,

OUTDOOR LEARNING AND PLAY

THE OLD SCHOOL:

"We used to have to walk a long way to get to the playground. And then you'd get there and someone would have to use the restroom, and you'd have to walk back, making sure there was supervision."

THE NEW SCHOOL:

The playground for our young kids is so much more accessible. And we love having a drinking fountain out there."

— Sara Keaney, First-Grade
Teacher, Alum Creek
Elementary School:
Lewis Center, Ohio

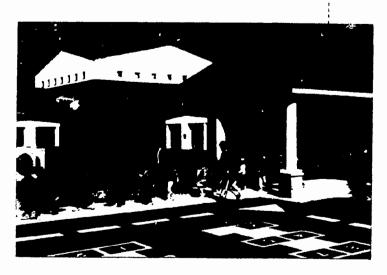
Playgrounds, incorporated on public school property for both school and community use, have evolved considerably over the past several decades. Playgrounds constructed in the 1950s or 1960s typically offered metal play structures, such as swings, slides, and jungle gyms, over sand and asphalt surfaces. Many older playgrounds, including those built as recently as the early 1990s, are unlikely to meet current safety and accessibility guidelines for deck heights, buffer zones, guard rails and other protective barriers, and resilient surfacing. Today's play areas offer not only safer options for children in swinging, climbing, and sliding, but a greater sense of challenge and exploration through the installation of modular structures that feature a variety of play components, ranging from circular overhead ladders and ribbon slides to gear panels and periscopes.

Most school systems today are incorporating two or three outdoor play areas for students. clustering age groups and providing separate access. Pre-kindergarten and kindergarten-level playgrounds typically feature swing sets, smaller-scale slides and climbers, and rocking or spring animals; as well as surface games such as four-square and hopscotch. Surface detailing for young children might also include "tot tracks," with sequenced shapes and colors, color circles, numbered lines, and painted clocks. Many playground features for children in this age group are designed to encourage a sense of both physical challenge and risk-taking, including balancing, exploration through changes in scale and height, climbing, and jumping; as well as social interaction through components including multi-seat spring rides and "open-ended" play materials such as sand and water."



The play area for younger students at South Ripley Elementary School in Versailles, Indiana, is directly accessible from their wing of the school. Asphalt parement. while not suitable for use as a resilient surface below play equipment, can be programmed as a "hard play surface" with painted games, which also meets accessibility guidelines. Around play structures, a combination of wood-fiber and rubber tiles represents accessible, resilient surfacing. Ramps and transfer points also help to meet accessibility requirements on modular play structures.

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OUTDOOR LEARNING AND PLAY

Primary and intermediate-grade level play aren's incorporate equipment and larger structures with higher deck heights as well as components requiring more upper-body strength and endurance, such as rings and parallel or chinning bars. Fitness clusters may also be used for strengthening exercises. Play areas for older children often introduce courts and fields to encourage group game-playing that requires team interaction and rule following.

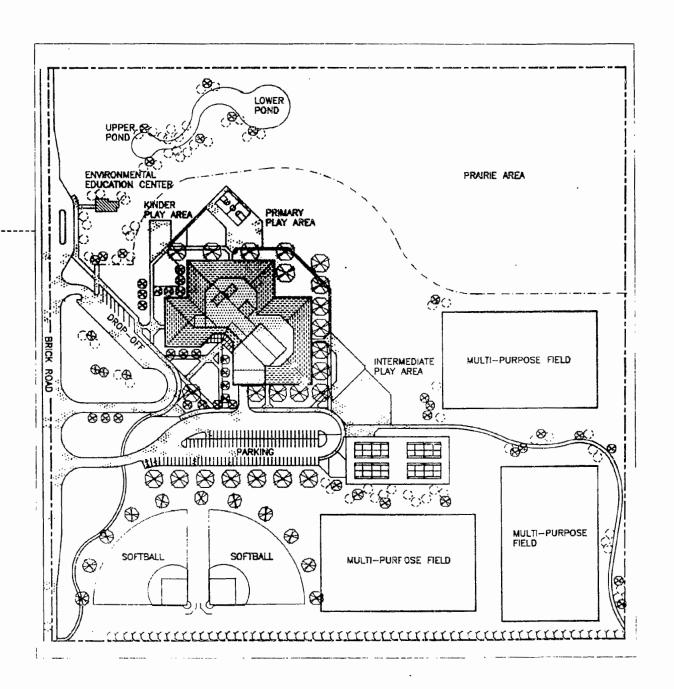
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The environmental education center at Prairie Vista I.Iementary School in Harris Vouruship, Indiana, features native plantings and an aquatic habitat.

Designed with extensive community input, the environmental lab at Horizon Flementary School in Granger, Indiana, is a two rue in the students. The lab tentures mative plantings, ponds, a small waterfull and bridge, and an amphitheater.

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OUTDOOR LEARNING AND PLAY

Competitive play components, such as full-court basketball, tetherball or funrielball, are also common in playgrounds for older children, as well as instructive features such as a U.S. or world map or a compass. Clustered benches and tables can be programmed as outdoor classroom areas. They also allow for socializing and informal gathering, and are often introduced in play areas for upper primary and intermediate grades. Contemporary outdoor play areas at all grade levels are also typically more compact than their predecessors of previous decades, allowing for more effective supervision and greater economy of playground surfacing.

"Play is a life skill," says Director of School Improvement Lynn Black, of the Metropolitan School District of Pike Township, in Indianapolis, Indiana. "Physical health is a life skill. We've found that kids are not exercising as much as they should, and we need to provide an avenue for them to get outside and improve their physical fitness and social interaction skills."

Black spearheaded a committee specifically formed to oversee the planning of outdoor learning and play areas at the new Fishback Creek Public Academy in Pike Township. The committee, which included a physical education teacher, a special education teacher, additional faculty, and the principal, helped create the vision for use of the outdoors for play and instruction. The new school will feature two playgrounds as well as a number of fitness "stations" around the school campus. "We try to set up playgrounds to be age-appropriate for the children's development," says Black. "Our number one concern is safety; from there, we look at the equipment in terms of how it will enrich the children. We look at their interest levels; for example, older children are both more competitive and more social."

Among the committee's goals was the need to attract the community and ensure that local residents felt welcome on the school's grounds and play areas. "We want the playgrounds to have a park-like setting," says Black. "We'll include trash receptacles and a variety of flowering shrubs, evergreens, and trees. We'd like to include plantings

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till attract butterflies and hummingbirds, but don't have a lot of pollen or attract bees. It's also our goal to have an outdoor environmental lab in the future, and this will give us a start. We plan to use the playgrounds to help teach our children about the importance of recycling and taking care of the environment. We'll be setting an example by showing them that much of the equipment is composed of recycled plastic and aluminum.

"Being outdoors does so much for the mental and physical well-being of children."

Black adds. "We all know what being physically fit does for adults—why shouldn't we be offering that opportunity to developing children?"



Kindergartners in Whiting, Indiano, enjoy a fenced-in play area adjacent to the early-childhood classrooms at the Whiting Milletic Complex.



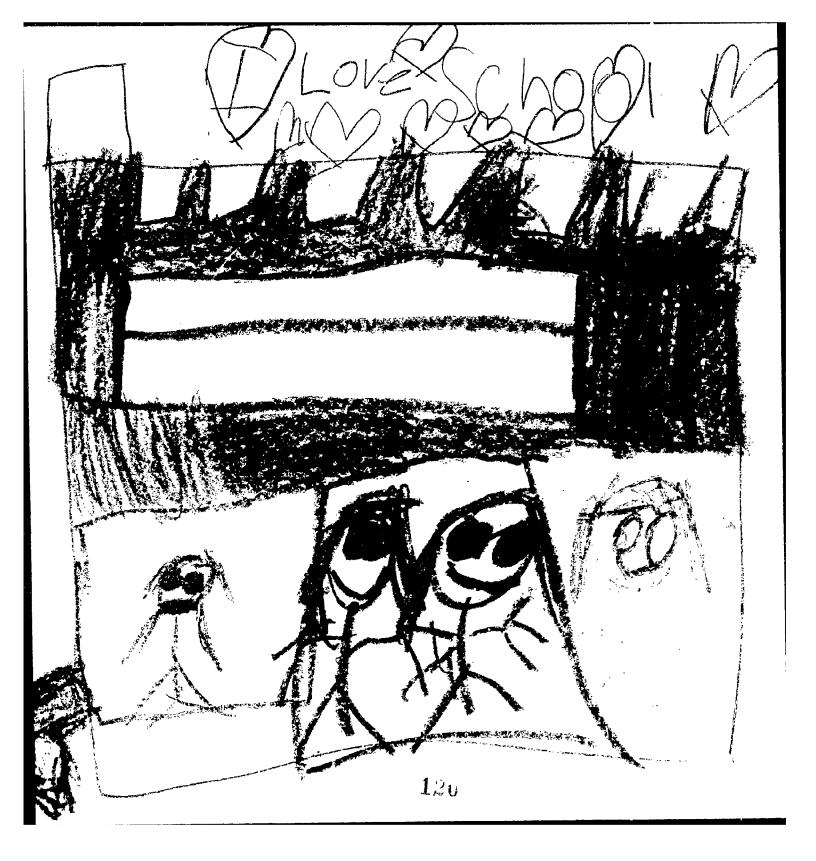
"IN A MODERN FACILITY, THE TEACHABLE MOMENT IS WITHIN GRASP. IT CAN BE REACHED."

—Sam Towarak, Assistant Superintendent, Beriag Strait School District, Alaska AFTER-SCHOOL STUDY ROOM. More TV to watch the Discovery Channel...a water fountain at every desk...a mall...A PET STORE ELEVATORS AND ESCALATORS...computers on the Art room...a swimming pool and showers...A ROOM FOR WATER GUN HIGHTS...an arcade...a stage with a spotlight...a museum with exhibits on the Egyptians, Black history, presidents, and dingsaurs...AN AQUARIUM...and daycare for the mothers who want to go to work and don't have a babysitter."

Strangent March 2010 construction.
 Home at the construction.

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A PLACE WHERE PEOPLE WANT TO BE

"It is not to be forgotten that children have eyes to see with, tastes to be gratified, and minds susceptible of pleasant and unpleasant associations, as well as their elders. If the parent has a taste to gratify in the location, construction, and adornment of his dwelling house. then the child has no less in those of the school house. As this taste is gratified or disregarded, it may be to him a palace or a prison."

—State Board of Education member in the mid-1800s

When asked about the differences between working in the new Washington Irving Elementary IPS *14 in urban Indianapolis and the circa-1878 school that preceded it. Principal Elizabeth Odle has no shortage of answers. "This school is in an impoverished neighborhood," she says. "When the kids come into school now, they feel great about being here. They love to show the school to other children. And the teachers don't have to fight the environment—they're more enthusiastic because it's made their job so much easier."

Odle also points out that the new building has enabled the quality of volunteerism to increase significantly. "Parents can do so much more now that we have the parent center," she says. "They have a place to work, even if they need to bring small children. They can stay longer and get more done. The parent center is right up front in the building, near our office. It demonstrates that we value our parents."

Joyce Ledell, whose son attends fifth grade at Washington Irving Elementary, has volunteered at the school since her son was in second grade, and has seen the contrast in the quality of the educational facilities since the new school opened. "The old school always brought back memories, because it was exactly the kind of school I went to." Ledell comments. "It's important for the kids to have something to look forward to. For my son, the technology has really made a difference. He loves the computers. He's very proud of the new school—it has so much more to offer."

Increased enthusiasm and energy, a greater sense of pride, improved flexibility and productivity, more efficiency and time savings, and enhanced volunteerism are among the many reasons that communities actively endorse modern facilities over outdated buildings as a learning environment. Sam Towarak, assistant superintendent of the Bering Strait School District in Alaska, points to another important difference: "In our new school in the village of Gambell, we've seen discipline problems come down. The students are able to stay focused on learning. The school is not overcrowded, as it

was before. They're also able to forget about the weather elements—the cold and the high winds—because the school is well constructed and withstands those elements. The entire school is programmed more for the kids now, and is very flexible."

Towarak also points out, as does Elizabeth Odle at Washington Irving Elementary, that the quality of community volunteerism has improved: "We enhanced our materials development center in the new school," he says. "This is where villagers come in to help prepare the materials used in the educational program, including those that address our native culture and history. Our volunteers are able to work much more effectively and quickly. Their space is now within the library, whereas before they were in a small room in a basement."

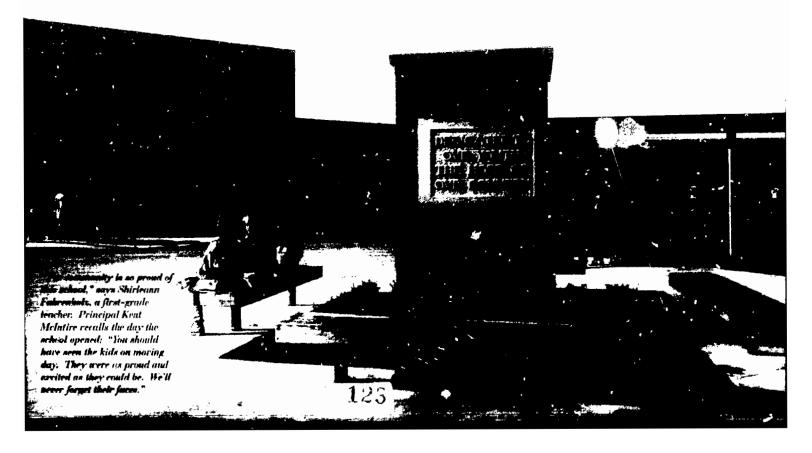
"People feel pride and respect in this school now," says Principal I Jizabeth Odle of the new Washington Irving I Jementary IPS '14 new downtown Indianapolis, "The design of the school dignified the neighborhood by complementing the homes, We're seen no grafith, no randalism, no destructive elements."



A PLACE WHERE PEOPLE WANT TO BE

Harold L. Hawkins, professor emeritus in educational administration at Texas A&M University and a former school superintendent, points out that, "Although it need not be excessively ostentatious, a school sets a standard of excellence for the entire community. A building should attract people: students, teachers and others...A test of a good learning environment—and a good school building—is whether people want to be there when they don't have to be."

Clearly, those directly involved in schools have become strong advocates for the quality of the learning environment, and point to many ways in which education is enhanced through better buildings. But are there specific results that indicate a direct tie between facilities and learning? Studies are limited, but the issue is receiving more attention than ever before. A few recent studies have shown that a correlation does indeed exist between the caliber of facilities and the quality of learning.



A study entitled "Building Condition and Student Achievement and Behavior," conducted by Carol S. Cash, reviewed 47 schools in rural Virginia during the 1991-1992 school year. The study concluded that, "...student achievement scores were higher in schools with better building conditions...science achievement scores were better in buildings with better science laboratory conditions. Cosmetic building condition appeared to impact student achievement and student behavior more than structural building condition. Finally, varying climate control, locker, and grafitti conditions were factors which were positively related to student achievement scale scores."

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A PLACE WHERE PEOPLE WANT TO BE

"Emerging education reforms are doomed unless we house them in environments that are conducive to learning...It is estimated that the average cost of constructing a new maximum security **prison** is more than \$74.000 per prisoner... the average cost of constructing a new elementary, middle, or high school is less than \$14,000 per student. We can clearly invest a little to save a lot in jails."

—Senator Carol Moseley-Braun, Illinois A 1992 study reviewed the potential correlation between student achievement and building conditions in the Washington, D.C. school system. In her thesis, Maureen Edwards concluded that as a school's condition improved from one category to the next, such as from poor to fair, the students' standardized achievement scores rose an average of 5.45 percent. If a school condition improved from poor to excellent, average student achievement scores rose 10.9 percent.

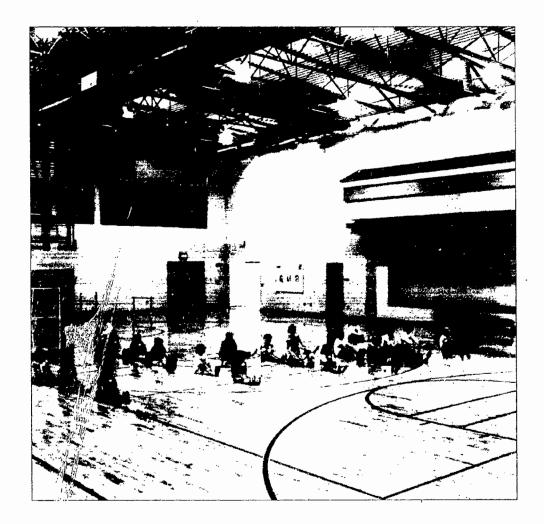
The Saginaw Schools project in Michigan involved the review of 31 schools. Staff in each school completed a School Improvement Survey that identified facility problems, more than two-thirds of which were addressed. During the five-year project, student achievement in math and reading rose in the highest achievement category and dropped in the lowest achievement category.

Recently, Carol S. Cash. Glen I. Earthman, and Eric W. Hines summarized the findings of three independent studies, including the review of the rural Virginia schools, with this note: "In all three studies, students' achievement test scores were higher in the better buildings. The greatest increases were found more often in cosmetic factors. Several specific building conditions had a positive effect on performance. In all three studies, for example, students' complete composite or total scale score means were higher in buildings that had windows in the majority of the instructional classrooms. Performance also ranked higher in buildings with less graffiti, better locker conditions, and acoustical ceilings. The Virginia studies found higher scores in buildings with air conditioning and

Lidward Mannen M. Bankhir. Condition: Parental Involvement and Sindent Achievement in the D.C. Pablic School Syring Meter. Theor. George award meter in May 1994.

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Cash Carol S. Larthmon, Glob L. and Thor. For W. Larthmon and Left Instruments and Property A. Moreov resolutions (1995) p. 12-14. 12.7



"Research shows that many people lose their jobs because they don't get along with other people, yet we tend not to teach that in our curricula. The school environment needs to allow for learning in which kids work in teams. And kids need access to technologythis isn't coming from us. it's coming from businesses and industrics. Survival will be based on the students' productivity and knowledge of technology."

> —Bob Flach, Assistant Superintendent, School City of Hammond; Hammond, Indiana

"Our gym is ancesome," says Kala Anne Wolfe, a third-grader at Nuocrest I lementary School in Frankfort, Indiana, "It has six hoops," "I like the whole school," says Tiffany Bower, also a third-grader, "It's big and pretty:"

A PLACE WHERE PEOPLE WANT TO BE

"I know from personal experience...when I was in the third grade. I was moved from a big, modern school to an old, gloomy school. It makes such a difference in how you feel about school. My biggest priority is safety. It means a lot to me that my girls enjoy going to school, and I enjoy being here to volunteer. I'm here all the time."

-Cindy Yost, Parent of Tiro Daughters at Taylor Road Elementary School: Reynoldsburg, Ohio more recently painted exterior walls...Based on our research, there's no doubt that building condition affects academic performance...If administrators and board members can improve the achievement of students and choose not to take the necessary steps, one wonders what message is being sent."

Fortunately, the message that schools do make a difference—and that they should be the centerpiece of a community and a strong source of pride—has begun to reach school systems and communities around the country. Dr. John E. Williams, superintendent of the Delphi Community Schools in Delphi, Indiana, points to the recent modernization



and expansion of Hillcrest Elementary School as one such success story: "This building has been very well received by our staff, the students, and the community. It symbolizes the way we were all able to work together—we took a dream and made it a reality."

Hillcrest fifth-grade teacher Wendy Kerker adds that she sees the difference every day in her students: "They're so much more excited...they look forward to so many different activities now—going out to read in the courtyard, getting up on the stage, or just being in the classroom because it's nice and airy and light. Last year, my fifth-graders told me they didn't want to leave to go on to middle school—they kept asking me, 'Can we stay?'"

Children at St. Lucie Elementary School in Fort Pierce, Florida, enjoy a number of different activities in the school's new media center. including arcess to computer programs. "I've read that there are over 3,000 scientific discoveries a day worldwide," says Bob Flach. assistant superintendent for the School City of Hammond, in Hammond, Indiana. "The scope of human knowledge doubles every 18 to 30 months. Technology is how we manage this information explosion-we need to bring the information of the world to the desktop."

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APPENDIX

MAKING A WORLD OF DIFFERENCE

Elementary Schools

Alum Creek Elementary School

pgs 26, 27, 56, 78, 116

Lewis Center, Ohio

Anna Elementary School

pgs 31, 49, 76

Anna, Ohio

National School Boards Association, 1995 Citation Winner

Batesville Primary School

pg 114

Batesville, Indiana

Borland Elementary School

pg 36

Imlay City, Michigan

Cherry Tree Elementary School

pgs 47, 81

Carmel, Indiana

AIA Indiana-ISA (Indiana Society of Architects).

1992 Biennial Award Citation:

Contractors Association and Masoniv Institute of Indiana,

Excellence in Masonry '91 Award'

American Association of School Administrators.

1990 Special Citation for Architectural Design

Conger Elementary School

pgs 26, 86, 87

Delaware, Ohio

Edison Elementary School

pgs 15, 82-85, 106, 107

Hammond, Indiana

American Association of School Administrators.

1994 Citation Winner, Projects with Distinction.

The Council of Educational Facility Planners, International.

1993 James D. MacConnell Award for Educational

Facility Planning Excellence:

Energy User News.

1993 Certificate of Merit, Efficient Building Awards

Elia Canavan Elementary School

pgs 93, 103

Medina, Ohio

Elm Road Elementary School

pgs 59·61, 112, 114

Osceola, Indiana

The Council of Educational Facility Planners. International.

1989 Certificate of Merit

Fishback Creek Public Academy

pgs 120, 121

Indianapolis, Indiana

Flint Lake Elementary School

pgs 17. 18

Valparaiso, Indiana

Gambell School

µgs 126. 127

Gambell, Alaska

Hillcrest Elementary School

pgs 19, 32, 132, 133

Delphi, Indiana

Horizon Elementary School

pgs 32, 33, 47, 66-69,

Granger, Indiana

105, 114, 118

American Association of School Administrators. 1997 Special Citation for Architectural Design

Joan Martin Elementary School

pgs 59. 115

Hobart, Indiana

Maywood Elementary School

pgs 1416, 19, 27, 30, 54, 61,

Hammond, Indiana

78, 80, 82 85, 104, 113-115

American Association of School Administrators.

1997 Special Citation for Architectural Design:

Consulting Specifying Engineer, 1995 Integrator Award;

The Council of Educational Facility Planners, International,

1993 James D. MacConnell Award for Educational

Facility Planning Excellence

McNab Elementary School

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Pompano Beach, Florida

Morton Elementary School

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Hammond, Indiana

American Association of School Administrators. 1994 Citation Winner, Projects with Distinction: National School Boards Association, 1994 Citation Winner: The Council of Educational Facility Planners, International, 1993 James D. MacConnell Award for Educational Facility Planning Excellence: American School & University. 1993 Special Citation for Outstanding Educational-

New Britton Elementary School

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Fishers, Indiana

Architecture

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American School & University Educational Interiors Showcase, Honorable Mention, 1992

North Harrison Elementary School

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Ramsey, Indiana

American Association of School Administrators. 1983 Special Citation for Architectural Design: American School & University.

1983 Special Citation for Outstanding School Building

Norcrest Elementary School

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Pompano Beach, Florida Osolo Elementary School

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Palm Beach Gardens Elementary School Palm Beach Gardens, Florida

Prairie Vista Elementary School

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The Council of Educational Facility Planners, International.

1991 Citation Winner

Rose Pioneer Elementary School

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Delaware, Ohio

Ohio Concrete Masonry Association,

1996 Merit Award for Outstanding Use of Standard

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South Ripley Elementary School

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1996 Educational Building Masonry of the Year Award

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The American School Board Journal, Learning by Design, 1997 Citation of Excellence

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Elementary Schools

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Kids on playground - inside back cover: Debbie Lehman

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"I DIDN'T REALIZE WHAT AN IMPACT A CLASSROOM COULD HAVE ON CHILDREN UNTIL WE MOVED INTO OUR NEW SCHOOL. OUR KIDS ARE DOING BETTER AND THEY'RE MUCH MORE ATTENTIVE. IT'S SO MUCH MORE PLEASANT. IN THE OLD CLASSROOMS THEY WERE EASILY DISTRACTED WITH THE CLUTTER AND THE PROBLEMS WITH HEATING AND NO AIR CONDITIONING...NOW. THEY STAY FOCUSED. THEY'RE COMFORTABLE...AND THEY'RE PROUD OF THEIR GLASSROOMS. THEIR DESKS. THEIR WORK ON DISPLAY—THEY FEEL MUCH MORE VALUED HERE."

7

Research Williams Academ In in Valley School Olive

"IF KIDS THINK THAT SCHOOL IS A WONDERFUL PLACE TO GO. THAT HE MOVES THE BIGGEST BARRIER OF ALL. AFTER ALL. THIS IS SCHOOL! 'BUT YOU SHOULD SEE THESE KIDS 'COMING IN AT 8:40 IN THE MORNING—THEY'RE EXCITED, TALKING, LAUGHING...AND IN THE AFTERNOON, THEY DON'T WANT TO LEAVE."

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